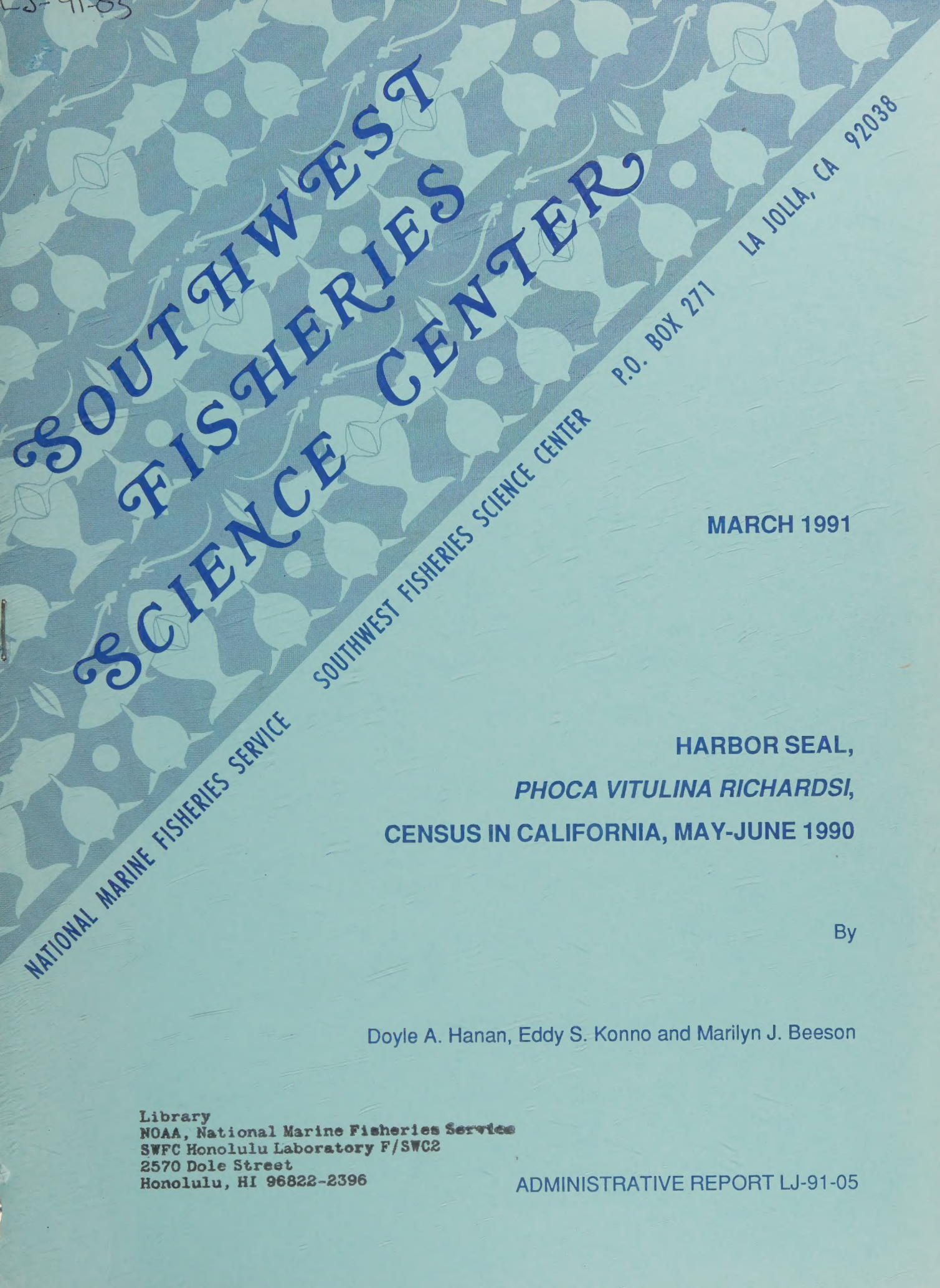




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**HARBOR SEAL,
PHOCA VITULINA RICHARDSI,
CENSUS IN CALIFORNIA, MAY-JUNE 1990**

By

Doyle A. Hanan, Eddy S. Konno and Marilyn J. Beeson

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HARBOR SEAL, PHOCA VITULINA RICHARDSI, CENSUS
IN CALIFORNIA, MAY-JUNE, 1990

By

Doyle A. Hanan
California Department of Fish and Game
c/o Southwest Fisheries Science Center
La Jolla, California 92038

Eddy S. Koono and Marilyn J. Beeson
California Department of Fish and Game
330 Golden Shore, Suite 50
Long Beach, California 90802

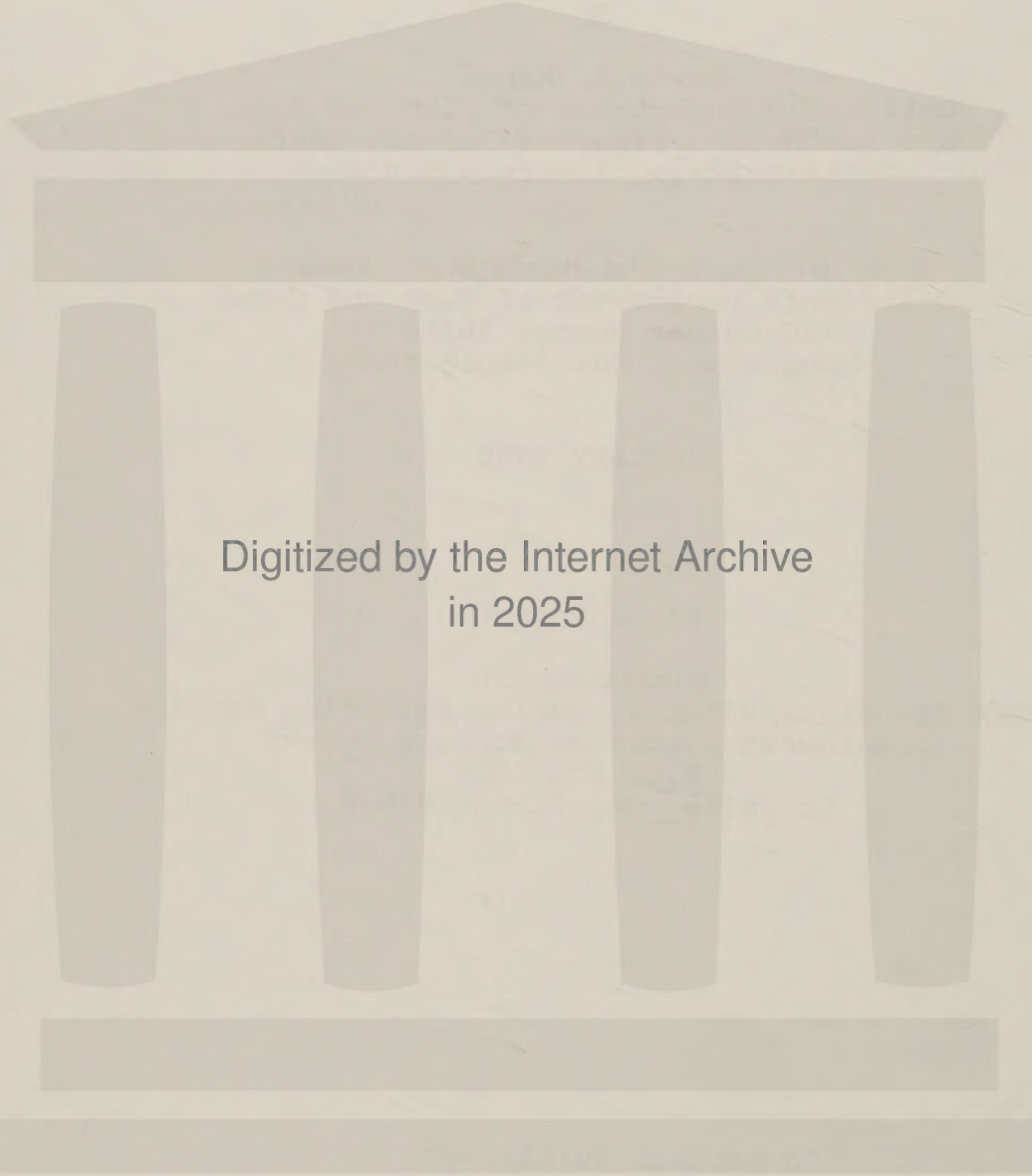
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HARBOR SEAL, PHOCA VITULINA RICHARDSI, CENSUS

IN CALIFORNIA, MAY-JUNE 1990

by

Doyle A. Hanan, Eddy S. Konno, and Marilyn J. Beeson

INTRODUCTION AND METHODS

California Department of Fish and Game (CDFG) initiated a harbor seal, Phoca vitulina richardsi, census along the California coast in 1981. The census is part of a assessment program conducted cooperatively with NOAA/National Marine Fisheries Service Fisheries (NMFS). The census data are used as an index of abundance to detect changes in population abundance or distribution. This is not an estimate of the total number of harbor seals in California; it is an estimate of the total number of seals hauled out on the rocks and beaches, which is probably about 50 to 70 percent of the peak seasonal abundance (Boveng 1988). The first census was incomplete, but allowed refinement of techniques used in subsequent censuses. Those techniques and the results of the 1982 to 1989 censuses are reported in Miller et al. (1983), Hanan (1990), and Hanan et al. (1985, 1986a, 1986b, 1987, 1988, and 1989). This report presents results of the 1990 census, which employed previous survey techniques as closely as field conditions permitted.

For the survey, we flew at an altitude of 600 feet in a

Partenavia P68 Observer¹, which is equipped with a large photogrammetric port in the floor behind the copilot seat. This port enables us to take nearly vertical pictures of the seals and contributes less counting bias to the survey than oblique pictures.

We photographed (weather permitting) sequentially northward, to take advantage of the northward progression by time and location of the low tide. Since the tides progress northward faster than the survey plane, we could only survey a section of the coast each day. We started at the southern-most hauling site one hour before local low tide and surveyed northward until an hour and a half after local low tide. We surveyed some sites on consecutive days to assure adequate photographic coverage. If a discrepancy occurred between the counts for the two days, the better photographs or the higher counts were used for the site count. A few sites were surveyed on the return south, because they could not be surveyed during our northward flight due to high winds or fog.

In contrast to the coastal sites, we surveyed the major bays and estuaries during the high tide window of one hour before to an hour and a half after local high tide. The Channel Islands were surveyed between 1030 and 1430 hours. Because of camera failure during the May island survey, the Channel Islands were resurveyed in June.

¹ Use of brand names does not imply endorsement by CDFG or NMFS.

The survey team consisted of a pilot, data recorder, computer operator, and photographer. We photographed the seals with a motor-driven Hasselblad camera (model 500-ELM), 80 mm or 100 mm lenses, pistol grip, and large capacity (70 frames) film magazines. We used either Kodak 64 or 200 ASA Ektachrome film and utilized a Soligor II spotmeter to assess lighting conditions. A Nikon 35 mm camera with motor-drive and a 100 mm lens served as a backup camera system when the Hasselblad malfunctioned. The data recorder kept track of position, time, frames exposed, estimated number of seals in a flight book of coastal charts. These same data were maintained by the computer operator in a laptop computer with software interfacing the camera, navigational LORAN C, and computer.

Because the Hasselblad malfunctioned in a manner that could not be detected until the film was developed, counts for 33 mainland sites (Appendix I) are based on the photographer's estimates, which were routinely made and recorded as all sites were photographed. When photographer's estimates for 1986-1990 were compared to the film counts, the estimates tended to be lower than the film counts (Figure 1); thus the estimates are a conservative measure of the seals at any of the sites and in the absence of a photograph were used to approximate the number of seals.

The same camera malfunction occurred during the island census and six of the islands were photographed a second time, one month after the original survey. As with the mainland survey, estimates

were made by the photographer as the sites were photographed; estimate and film count totals are presented by island in Table 3.

Besides the aerial survey, a group of observers counted seals from the shore (ground counts) at 53 mainland hauling sites during the survey. Depending on their availability of time to donate, they counted during one to four days of the survey. These observers counted seals each half hour or, if numbers were large, as frequently as conditions permitted. They counted, using binoculars or spotting scopes, from one hour before low tide to one and one half hours after low tide. If the ground count for a site exceeded the aerial count, we used the ground count for the estimated mainland total (Appendix I).

After the survey, we had the rolls of film from the aerial photographs developed in fifteen foot lengths, without cutting, using the E-6 process. After identifying the sites, we cut the film into the strips of frames for each site. We used dissecting microscopes to view the film, identify the sites, and count the seals. For each hauling site, we counted the seals by marking a thin plastic sheet laid over the film. We counted all seals as adults except those easily identified and recorded as pups. After identifying the sites and counting the seals, we transferred the data into a microcomputer database for storage and analysis.

The database includes both aerial and ground count information

stored by year (Appendix II). We used the database management program DBASE IV² to create and maintain the files as individual records for each hauling site along the California coast. The records contain descriptive information about each site as well as the seal counts (Appendix III).

² A trademark of Ashton-Tate, 10150 W. Jefferson Blvd., Culver City, CA 90230

RESULTS and DISCUSSION

We surveyed the mainland coast of California on June 18-22, 1990. The mainland total count was 15,865 seals, occupying 298 hauling sites, including 19 new sites (not previously identified or occupied, Table 1). There were fewer seals per site but more occupied sites than the previous year. Counties north of San Francisco Bay had exactly one half the mainland total (Table 1). In all previous surveys, the proportion north of the Bay was higher than the proportion south of the Bay. Considering the recent declines of harbor seals in Alaska, this proportional relation may be an indicator of problems in the population and monitoring should continue.

The mainland total includes the photographer's estimates for sites where the camera failed. The total estimated at those 33 sites was 1,362 seals which is 8.6% of the mainland total. To test the validity of using the photographer's estimates, estimates from the 1986-1990 surveys were plotted versus the film counts (Figure 1) and a linear regression was fit to the 761 points ($Y = 0.729X - 0.919$ $R^2 = 0.82$). Because a plot of predicted values versus residuals revealed a need to transform the data (Figure 2), the data are also presented (Figure 1) as a log-log plot of estimates versus film counts ($Y = 0.832X + 0.007$ $R^2 = 0.77$). Results of these plots and the regressions confirm the conservative nature of the estimates and may provide a factor for expanding the estimates

to better approximate the actual number of seals hauled during the survey.

We surveyed the southern California Channel Islands on May 21 and May 22 attempting to use the same techniques as for the mainland. Because the Hasselblad camera also malfunctioned during the island survey, the Channel Islands were surveyed again on June 28, 1990. The estimate for all eight islands was 2,808 seals, which is lower than counts in recent years (Table 2) and may reflect the seasonally late timing of the survey. However, a comparison of the photographer's estimates (Table 3) and the analysis of photographer's estimates versus film counts (Figures 1 and 2) indicates that the count is likely quite close to that which would have been counted in May.

The combined counts of the mainland and islands is 18,673 harbor seals hauled out during the 1990 survey (Table 4).

ACKNOWLEDGMENTS

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TABLE 1. Harbor seal mainland counts with the number of sites and occupied sites by county for the June 1990 census (DN=Del Norte, H=Humbolt, MEN=Mendocino, SON=Sonoma, MAR=Marin, CC=Contra Costa, SF=San Francisco, ALA=Alameda, SM=San Mateo, FI=Farallon Islands, SC=Santa Cruz, SCL=Santa Clara, M=Monterey, SLO=San Luis Obispo, SB=Santa Barbara, V=Ventura, SD=San Diego).

County	Seals	% Total	# Sites	# Occupied	Seals/site
DN	634	4	14	2	317
H	1645	10	62	20	82
MEN	1792	11	101	43	42
SON	1142	7	112	47	24
MAR	2687	17	64	23	117
CC	34	<1	1	1	34
SF	0	0	2	0	0
ALA	277	2	3	3	92
SM	995	6	45	17	59
FI	58	<1	*	*	*
SC	466	3	14	7	67
SCL	0	0	1	0	0
M	1949	12	141	57	34
SLO	2535	16	126	60	42
V	138	1	1	1	138
SB	1476	9	36	14	105
SD	37	<1	4	1	37
	15,865	100	728	297	53

*Multiple sites included as one count

TABLE 2. Southern California Channel Island harbor seal counts by year (SCL=San Clemente Island, CAT=Santa Catalina Island, SBI=Santa Barbara Island, SNI=San Nicolas Island, ANA=Anacapa Island, SCR=Santa Cruz Island, SRI=Santa Rosa Island, SMI=San Miguel Island).

YEAR	SCL	CAT	SBI	SNI	ANA	SCR	SRI	SMI	TOT
1982 ¹	8	68	2	694 ²	226	769	1008	1090	3865
1983	31 ³	82 ³	0 ³	694 ³	163 ⁴	588 ⁴	910 ⁴	1004 ⁴	3472
1984 ⁵	58	174	0	380	116	888	938	664	3218
1985 ⁶	67	117	31	139	207	515	585	619	2280
1986 ³	46	37	11	207	47 ⁷	117	487	1123	2075
1987 ⁸	180	205	8	470	292	902	1114	1150	4321
1988 ⁹	54	262	35	550	75	635	1200	1136	3947
1989 ¹⁰	245	372	12	434	293	922	1073	928	4279
1990	111	234	15	468	36	335	652	957	2808

1 Stewart 1982

2 Stewart and Yochem 1984A

3 Hanan et al. 1987

4 Stewart and Yochem 1984B

5 Hanan et al. 1986A

6 Hanan et al. 1986B

7 Only one site due to fog

8 Hanan et al. 1988

9 Hanan et al. 1989

10 Hanan 1990

TABLE 3. Southern California Channel Island harbor seal counts and photographer's estimates by island for 1990 with photographic 1989 counts for comparison (SCL=San Clemente Island, CAT=Santa Catalina Island, SBI=Santa Barbara Island, SNI=San Nicolas Island, ANA=Anacapa Island, SCR=Santa Cruz Island, SRI=Santa Rosa Island, SMI=San Miguel Island).

	SCL	CAT	SBI	SNI	ANA	SCR	SRI	SMI	TOTAL
1990									
May Estimate	82	294	20	220	242	507	1018	350	2733
June Estimate	*	*	12	550	47	267	588	1195	@3035
June photo count	111	234	15	468	36	335	652	957	2808
1989									
May photo count	245	372	12	434	293	922	1073	928	4279

*not surveyed in June

@includes estimates from May for SCL and CAT

TABLE 4. Summary of harbor seal counts for the years 1982-1990.

Year	Mainland			SoCal Island California	
	Total	# sites	% occupied	Total	Total
1982	13,474	426	57	3,865	17,339
1983	10,757	482	38	3,472	14,229
1984	10,885	518	42	3,218	14,103
1985	12,552	581	47	2,280*	14,832
1986	13,913	648	50	1,801*	15,714
1987	15,316	681	47	4,322	19,638
1988	14,493	695	40	3,947	18,440
1989	15,911	709	37	4,279	20,190
1990	15,865	728	41	2,808*	18,673

*Late June count-possibly missed peak abundance (see Tables 2-3)

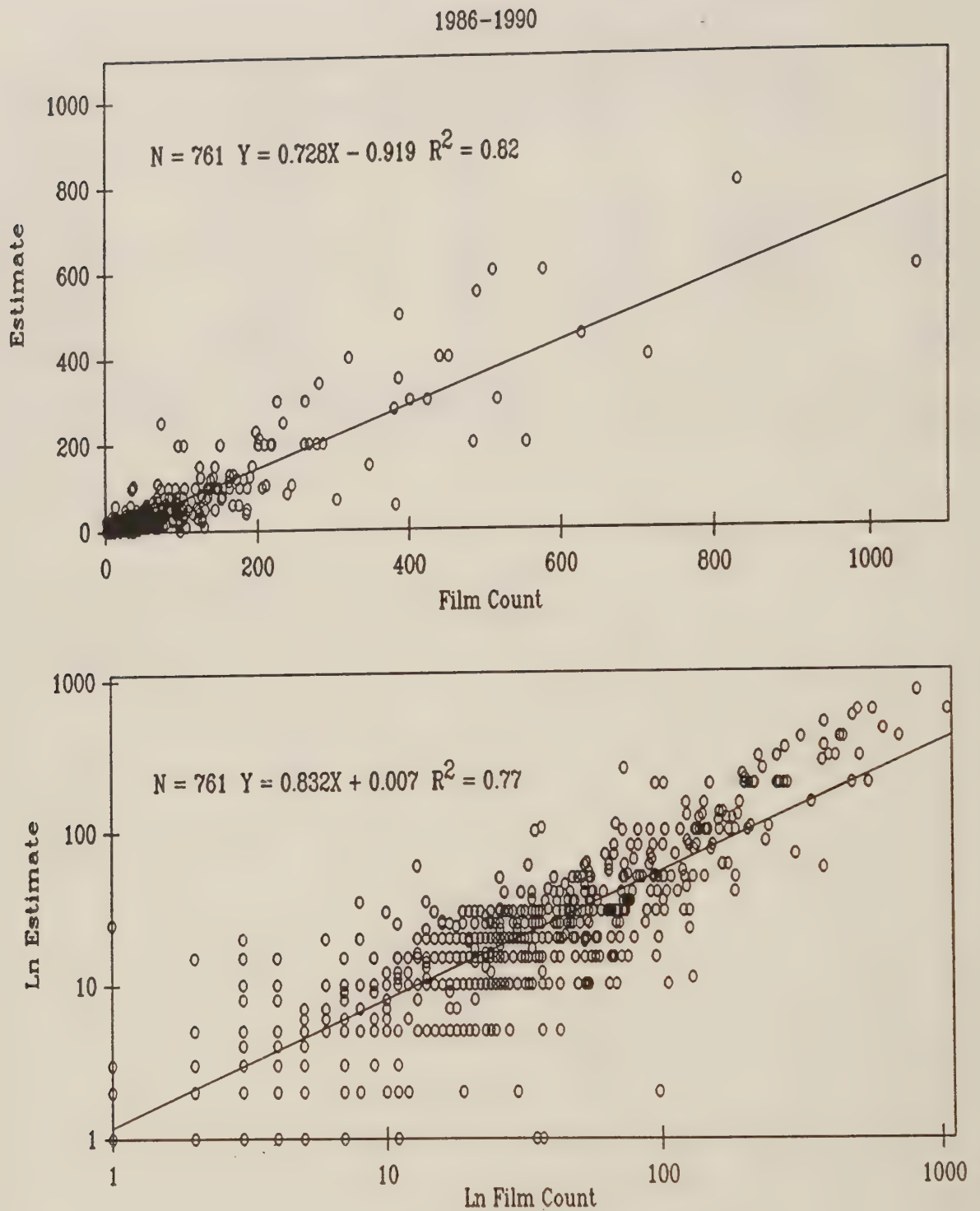


Figure 1. Photographer's estimate and photographic count.

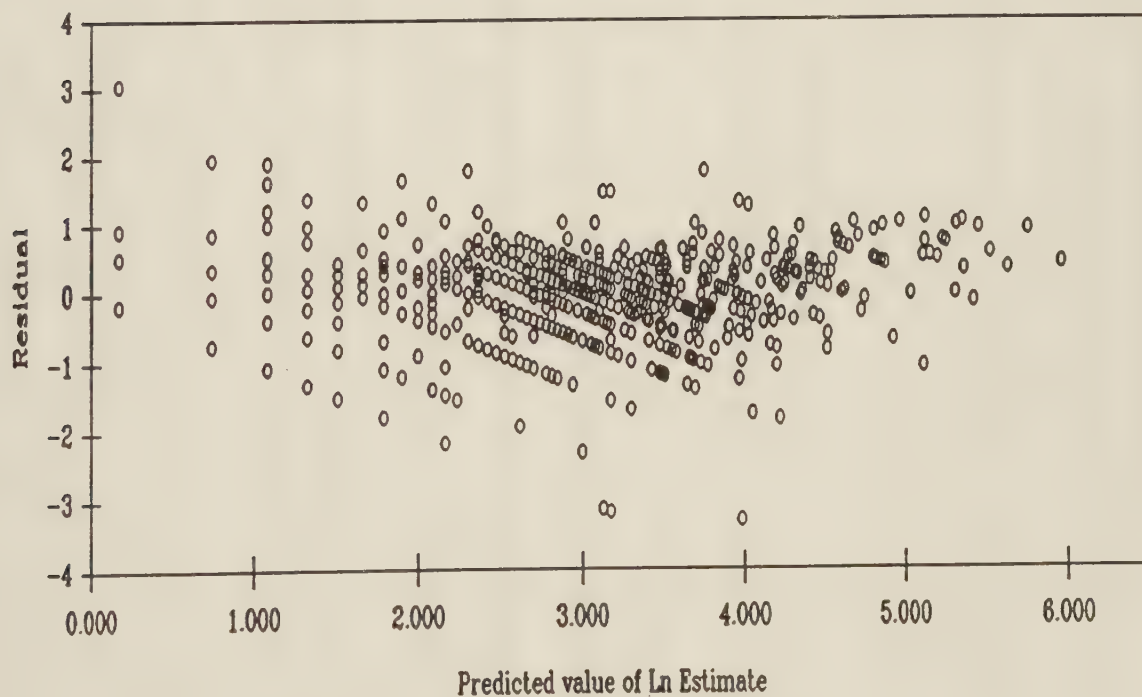
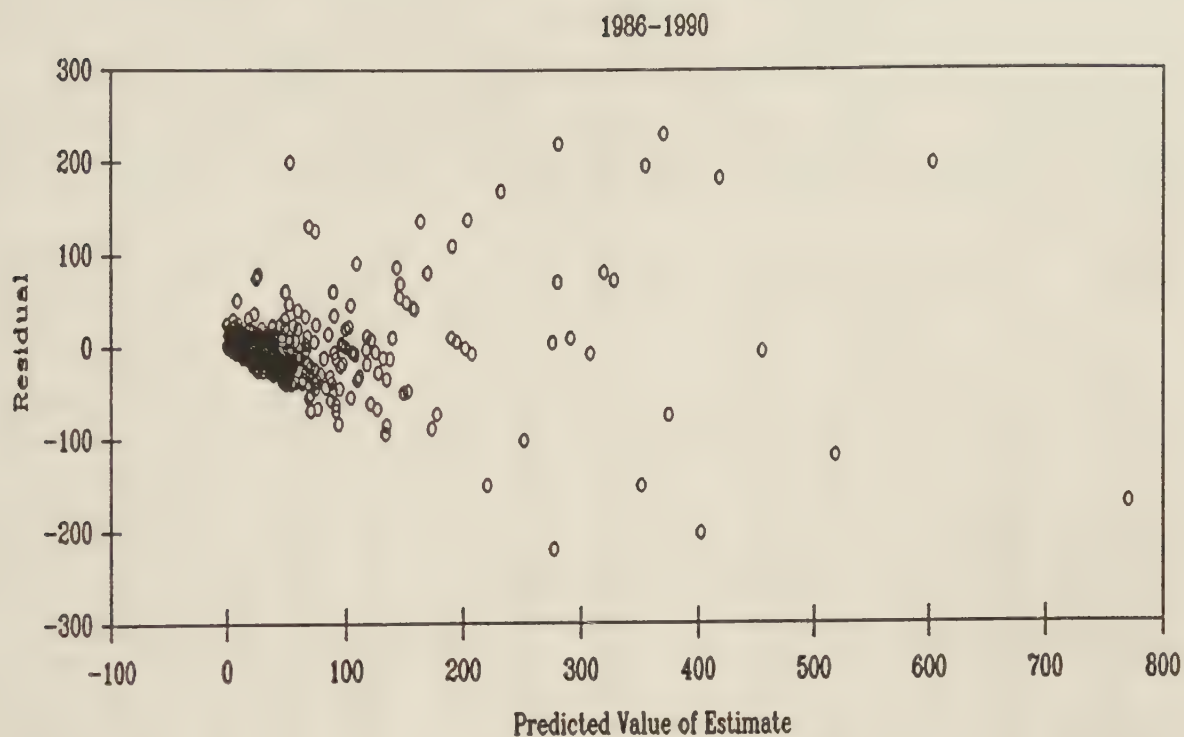


Figure 2. Predicted values and residuals.

APPENDIX I. Census results for the 1990 harbor seal survey along the mainland California coast. Date=date of count; Site=site number; Prob (source of problem possibly affecting count): C=camera, D=disturbance, F=fog; Time=time of count or photograph; FA=adult seal count from photograph; FP=count of pups from photograph; FT=total seals from photograph; GA=ground count of adult seals; GP=ground count of pups; GT=total seals from ground count; ET=higher number from FT or GT; Max=maximum count to date for a site.

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
	000.1			0	0	0	0	0	0	0	7
	001.0			0	0	0	0	0	0	0	0
	002.0			0	0	0	0	0	0	0	10
6/18/90	003.0		11:00	0	0	0	0	0	37	37	37
6/18/90	004.0		10:50	0	0	138	0	0	0	138	139
6/20/90	005.0		14:45	0	0	7	0	0	22	22	116
6/17/90	006.0		12:30	0	0	15	0	0	33	33	70
6/18/90	007.0		12:30	0	0	18	0	0	21	21	53
	008.0			0	0	0	0	0	0	0	11
6/17/90	009.0		11:00	0	0	14	0	0	22	22	70
6/18/90	010.0		11:19	0	0	0	0	0	0	0	205
	010.1			0	0	0	0	0	0	0	1
6/18/90	010.8		11:31	0	0	0	0	0	0	0	3
6/20/90	011.0		15:00	0	0	217	0	0	294	294	554
6/18/90	011.1		13:15	0	0	148	0	0	196	196	213
6/18/90	012.0		11:35	0	0	24	0	0	0	24	38
6/18/90	013.0		11:36	0	0	0	0	0	0	0	19
6/18/90	013.1		11:38	0	0	0	0	0	0	0	15
6/18/90	014.0		11:39	0	0	0	0	0	0	0	13
6/18/90	014.1		11:40	0	0	263	0	0	0	263	263
6/18/90	014.2		11:41	0	0	48	0	0	0	48	122
6/19/90	014.4		13:30	0	0	219	0	0	314	314	314
6/20/90	014.8		14:00	0	0	0	0	0	59	59	98
	015.0			0	0	0	0	0	0	0	247
6/18/90	015.1		13:30	0	0	0	0	0	43	43	228
	015.2			0	0	0	0	0	0	0	119
	016.0			0	0	0	0	0	0	0	239
	017.0			0	0	0	0	0	0	0	57
6/18/90	017.1		11:39	0	0	0	0	0	0	0	18
	018.0			0	0	0	0	0	0	0	127
	019.0			0	0	0	0	0	0	0	100
6/18/90	019.1		11:51	0	0	69	0	0	0	69	69
	019.2			0	0	0	0	0	0	0	13
	020.0			0	0	0	0	0	0	0	43
6/18/90	021.0		11:55	0	0	0	0	0	0	0	19
	021.1			0	0	0	0	0	0	0	10

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
6/18/90	021.2	11:56	0	0	0	0	0	0	0	26
	021.3		0	0	0	0	0	0	0	2
	021.5		0	0	0	0	0	0	0	8
6/18/90	022.0	11:58	0	0	68	0	0	0	68	68
6/18/90	023.0	11:59	0	0	0	0	0	0	0	13
6/18/90	023.1	12:08	0	0	9	0	0	0	9	34
	024.0		0	0	0	0	0	0	0	58
6/19/90	025.0	13:00	0	0	6	0	0	77	77	138
6/18/90	026.0	12:40	0	0	19	0	0	13	19	51
	026.1		0	0	0	0	0	0	0	22
6/18/90	027.0	12:30	0	0	14	0	0	0	14	29
	028.0		0	0	0	0	0	0	0	20
6/18/90	028.1	12:36	0	0	20	0	0	0	20	20
	029.0		0	0	0	0	0	0	0	2
	030.0		0	0	0	0	0	0	0	2
6/17/90	031.0	10:30	0	0	0	0	0	5	5	67
6/20/90	031.1	13:15	0	0	0	0	0	52	52	45
6/18/90	032.0	11:00	0	0	0	0	0	0	0	4
6/19/90	032.1	14:00	0	0	0	0	0	82	82	93
6/18/90	033.0	12:37	0	0	17	0	0	0	17	22
	033.1		0	0	0	0	0	0	0	16
6/18/90	033.2	12:42	0	0	98	0	0	0	98	98
6/20/90	034.0	14:00	0	0	24	0	0	42	42	38
	034.1		0	0	0	0	0	0	0	38
6/18/90	035.0	11:45	0	0	53	0	0	67	67	67
	035.1		0	0	0	0	0	0	0	3
6/18/90	036.0	11:30	0	0	32	0	0	35	35	42
6/18/90	036.1	12:30	0	0	0	0	0	2	2	2
	037.0	12:46	0	0	80	0	0	0	80	80
	038.0		0	0	0	0	0	0	0	68
6/18/90	039.0	12:46	0	0	163	0	0	19	163	199
6/20/90	039.05	13:00	0	0	11	0	0	42	42	42
6/18/90	039.1	13:00	0	0	23	0	0	129	129	129
6/19/90	039.2	14:45	0	0	0	0	0	8	8	8
6/18/90	040.0	12:48	0	0	0	0	0	0	0	126
	040.1		0	0	0	0	0	0	0	1
6/20/90	041.0	14:15	0	0	54	0	0	78	78	78
6/20/90	041.05	13:30	0	0	0	0	0	24	24	24
6/18/90	041.1	12:45	0	0	0	0	0	84	84	116
6/18/90	041.2	12:49	0	0	54	0	0	5	54	73
6/19/90	042.0	13:45	0	0	11	0	0	58	58	58
6/19/90	042.1	14:15	0	0	58	0	0	61	61	61
	043.0		0	0	0	0	0	0	0	21
	043.1		0	0	0	0	0	0	0	13

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
	044.0			0	0	0	0	0	0	0	24
6/18/90	045.0		12:53	0	0	1	0	0	0	1	22
6/18/90	046.0		12:56	0	0	32	0	0	29	32	41
	046.1			0	0	0	0	0	0	0	1
	047.0			0	0	0	0	0	0	0	13
6/18/90	048.0		13:10	0	0	0	0	0	0	0	22
6/18/90	049.0		13:12	0	0	41	0	0	0	41	95
	050.0			0	0	0	0	0	0	0	86
	051.0			0	0	0	0	0	0	0	62
6/18/90	052.0		13:13	0	0	10	0	0	0	10	126
6/18/90	053.0		13:14	0	0	16	0	0	0	16	197
6/18/90	054.0		13:14	0	0	27	0	0	0	27	96
6/18/90	055.0		13:15	0	0	124	0	0	0	124	130
	055.1			0	0	0	0	0	0	0	75
	055.2			0	0	0	0	0	0	0	20
	055.3			0	0	0	0	0	0	0	1
6/18/90	055.4		13:18	0	0	9	0	0	0	9	9
6/18/90	055.5		13:18	0	0	16	0	0	0	16	16
	056.0			0	0	0	0	0	0	0	50
	056.1			0	0	0	0	0	0	0	39
	056.2			0	0	0	0	0	0	0	33
	057.0			0	0	0	0	0	0	0	46
6/18/90	057.1		13:19	0	0	16	0	0	0	16	30
6/18/90	057.2		13:19	0	0	3	0	0	0	3	14
6/18/90	058.0		13:20	0	0	12	0	0	0	12	67
6/18/90	058.1		13:21	0	0	29	0	0	0	29	51
	058.5			0	0	0	0	0	0	0	18
6/18/90	058.7		13:21	0	0	19	0	0	0	19	21
6/18/90	058.9		13:22	0	0	7	0	0	0	7	43
	059.0			0	0	0	0	0	0	0	23
	060.0			0	0	0	0	0	0	0	11
6/18/90	061.0		13:22	0	0	25	0	0	0	25	25
	061.8			0	0	0	0	0	0	0	7
	062.0			0	0	0	0	0	0	0	17
	063.0			0	0	0	0	0	0	0	19
	064.0			0	0	0	0	0	0	0	27
	064.5			0	0	0	0	0	0	0	2
	065.0			0	0	0	0	0	0	0	43
	065.1			0	0	0	0	0	0	0	1
6/18/90	065.2		13:22	0	0	61	0	0	0	61	61
6/18/90	066.0		13:24	0	0	24	0	0	0	24	51
	066.1			0	0	0	0	0	0	0	45
	066.2			0	0	0	0	0	0	0	1
6/18/90	067.0		13:24	0	0	30	0	0	0	30	65

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
6/18/90	068.0	13:25	0	0	3	0	0	0	3	15
6/18/90	068.1	13:26	0	0	19	0	0	0	19	19
	068.15		0	0	0	0	0	0	0	21
	068.2		0	0	0	0	0	0	0	42
6/18/90	068.25	13:28	0	0	10	0	0	0	10	43
	068.3		0	0	0	0	0	0	0	1
	069.0		0	0	0	0	0	0	0	15
6/18/90	069.1	13:30	0	0	12	0	0	0	12	15
6/18/90	070.0	13:33	0	0	12	0	0	0	12	28
	070.1		0	0	0	0	0	0	0	15
6/18/90	071.0	13:33	0	0	104	0	0	0	104	104
	071.1		0	0	0	0	0	0	0	2
	072.0		0	0	0	0	0	0	0	68
	073.0		0	0	0	0	0	0	0	13
6/18/90	073.1	13:34	0	0	15	0	0	0	15	22
6/19/90	074.0	13:00	0	0	41	0	0	52	52	68
	074.1		0	0	0	0	0	0	0	2
	075.0		0	0	0	0	0	0	0	69
	075.1		0	0	0	0	0	0	0	2
6/18/90	076.0	13:39	0	0	82	0	0	0	82	102
	076.1		0	0	0	0	0	0	0	40
6/18/90	077.0	13:40	0	0	33	0	0	0	33	33
	077.1		0	0	0	0	0	0	0	23
	078.0		0	0	0	0	0	0	0	104
6/18/90	079.0	13:40	0	0	73	0	0	0	73	73
	079.1		0	0	0	0	0	0	0	4
	080.0		0	0	0	0	0	0	0	33
6/18/90	080.1	13:41	0	0	18	0	0	0	18	18
	081.0		0	0	0	0	0	0	0	18
	081.1		0	0	0	0	0	0	0	8
	081.2		0	0	0	0	0	0	0	20
6/18/90	081.3	13:43	0	0	26	0	0	0	26	26
	082.0		0	0	0	0	0	0	0	70
	083.0		0	0	0	0	0	0	0	58
6/20/90	084.0	12:26	0	0	13	0	0	0	13	14
6/20/90	085.0	12:27	0	0	66	0	0	0	66	122
6/20/90	086.0	12:32	0	0	0	0	0	0	0	68
	086.8		0	0	0	0	0	0	0	1
6/20/90	087.0	12:30	0	0	175	0	0	0	175	175
	087.1		0	0	0	0	0	0	0	1
	088.0		0	0	0	0	0	0	0	5
	089.0		0	0	0	0	0	0	0	20
6/20/90	090.0	12:35	0	0	8	0	0	0	8	15
6/20/90	091.0	12:36	0	0	12	0	0	0	12	13

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
6/20/90	091.1	12:36	0	0	18	0	0	0	18	21
	092.0		0	0	0	0	0	0	0	12
	093.0		0	0	0	0	0	0	0	6
	093.1		0	0	0	0	0	0	0	18
	093.3		0	0	0	0	0	0	0	1
	094.0		0	0	0	0	0	0	0	2
6/20/90	094.1	12:40	0	0	8	0	0	0	8	10
6/20/90	094.2	12:40	0	0	4	0	0	0	4	5
	094.3		0	0	0	0	0	0	0	1
	094.4		0	0	0	0	0	0	0	6
	094.5		0	0	0	0	0	0	0	1
	095.0		0	0	0	0	0	0	0	15
	096.0		0	0	0	0	0	0	0	19
	096.1		0	0	0	0	0	0	0	14
6/20/90	096.2	12:41	0	0	3	0	0	0	3	2
6/20/90	096.3	12:41	0	0	10	0	0	0	10	1
	096.4		0	0	0	0	0	0	0	3
6/20/90	097.0	12:41	0	0	8	0	0	0	8	23
6/20/90	097.5	12:42	0	0	16	0	0	0	16	26
6/20/90	098.0	12:42	0	0	26	0	0	0	26	59
6/20/90	099.0	12:42	0	0	24	0	0	0	24	5
	099.1		0	0	0	0	0	0	0	7
6/20/90	099.2	12:43	0	0	4	0	0	0	4	6
6/20/90	099.3	12:43	0	0	2	0	0	0	2	2
6/20/90	099.5	12:46	0	0	0	0	0	0	0	3
6/20/90	100.0	12:47	0	0	0	0	0	0	0	9
6/20/90	101.0	12:48	0	0	29	0	0	0	29	29
6/20/90	102.0	12:50	0	0	5	0	0	0	5	44
	102.1		0	0	0	0	0	0	0	2
	103.0		0	0	0	0	0	0	0	1
6/20/90	103.8	12:51	0	0	6	0	0	0	6	9
6/20/90	104.0	12:51	0	0	7	0	0	0	7	11
	104.1		0	0	0	0	0	0	0	3
	104.2		0	0	0	0	0	0	0	1
	104.3		0	0	0	0	0	0	0	1
	104.5		0	0	0	0	0	0	0	11
6/20/90	104.8	12:52	0	0	4	0	0	0	4	4
6/20/90	105.0	12:53	0	0	7	0	0	0	7	7
	105.1		0	0	0	0	0	0	0	5
	106.0		0	0	0	0	0	0	0	1
	106.1		0	0	0	0	0	0	0	1
	107.0		0	0	0	0	0	0	0	34
	107.1		0	0	0	0	0	0	0	5
	108.0		0	0	0	0	0	0	0	15

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
	109.0			0	0	0	0	0	0	0	10
6/20/90	109.5		12:55	0	0	1	0	0	0	1	1
6/20/90	109.6		12:56	0	0	3	0	0	0	3	3
6/20/90	109.8		12:56	0	0	3	0	0	0	3	3
6/20/90	110.0		12:57	0	0	122	0	0	0	122	208
6/20/90	111.0		12:57	0	0	48	0	0	0	48	98
6/20/90	112.0		12:58	0	0	28	0	0	0	28	43
	113.0			0	0	0	0	0	0	0	37
	114.0			0	0	0	0	0	0	0	71
	114.1			0	0	0	0	0	0	0	3
	114.2			0	0	0	0	0	0	0	8
	114.3			0	0	0	0	0	0	0	3
	114.4			0	0	0	0	0	0	0	9
	114.5			0	0	0	0	0	0	0	6
	115.0			0	0	0	0	0	0	0	46
	116.0			0	0	0	0	0	0	0	6
6/20/90	117.0		12:59	0	0	11	0	0	0	11	29
	118.0			0	0	0	0	0	0	0	13
	118.1			0	0	0	0	0	0	0	4
	118.5			0	0	0	0	0	0	0	3
	119.0			0	0	0	0	0	0	0	9
	119.1			0	0	0	0	0	0	0	12
	120.0			0	0	0	0	0	0	0	2
	121.0			0	0	0	0	0	0	0	3
	122.0			0	0	0	0	0	0	0	18
	123.0			0	0	0	0	0	0	0	4
	124.0			0	0	0	0	0	0	0	1
	125.0			0	0	0	0	0	0	0	13
6/20/90	126.0		13:01	0	0	6	0	0	0	6	11
6/20/90	126.4		13:03	0	0	7	0	0	0	7	7
	126.5			0	0	0	0	0	0	0	13
6/20/90	127.0		13:06	0	0	118	0	0	0	118	118
	128.0			0	0	0	0	0	0	0	1
6/20/90	129.0		13:09	0	0	30	0	0	0	30	54
6/20/90	130.0		13:11	0	0	96	0	0	0	96	266
6/20/90	130.1		13:11	0	0	20	0	0	0	20	30
6/20/90	131.0		13:17	0	0	19	0	0	0	19	71
6/20/90	131.1		13:17	0	0	5	0	0	0	5	56
6/20/90	131.2		13:17	0	0	21	0	0	0	21	21
6/20/90	131.3		13:17	0	0	33	0	0	0	33	64
6/20/90	132.0		13:15	0	0	44	0	0	0	44	107
	132.1			0	0	0	0	0	0	0	8
6/20/90	133.0		13:15	0	0	34	0	0	0	34	159
6/20/90	134.0		13:17	0	0	6	0	0	0	6	12

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
	134.1		0	0	0	0	0	0	0	4
	134.2		0	0	0	0	0	0	0	10
6/20/90	134.5	13:18	0	0	23	0	0	0	23	23
6/20/90	135.0	13:21	0	0	0	0	0	0	0	38
6/20/90	136.0	13:23	0	0	14	0	0	0	14	14
	137.0		0	0	0	0	0	0	0	5
	137.1		0	0	0	0	0	0	0	2
	138.0		0	0	0	0	0	0	0	26
6/20/90	138.1	13:27	0	0	30	0	0	0	30	30
	139.0		0	0	0	0	0	0	0	14
	139.1		0	0	0	0	0	0	0	14
	140.0		0	0	0	0	0	0	0	19
	140.1		0	0	0	0	0	0	0	1
6/20/90	141.0	13:27	0	0	76	0	0	0	76	78
	141.1		0	0	0	0	0	0	0	24
	142.0		0	0	0	0	0	0	0	31
	143.0		0	0	0	0	0	0	0	8
	143.5		0	0	0	0	0	0	0	2
	144.0		0	0	0	0	0	0	0	28
	144.5		0	0	0	0	0	0	0	10
	145.0		0	0	0	0	0	0	0	35
	146.0		0	0	0	0	0	0	0	72
6/20/90	147.0	13:35	0	0	103	0	0	0	103	103
	148.0		0	0	0	0	0	0	0	70
6/20/90	149.0	13:35	0	0	94	0	0	0	94	94
6/20/90	150.0	13:35	0	0	29	0	0	0	29	97
	151.0		0	0	0	0	0	0	0	80
	152.0		0	0	0	0	0	0	0	85
6/20/90	153.0	13:39	0	0	23	0	0	23	23	93
6/20/90	154.0	13:39	0	0	68	0	0	14	68	68
	154.1		0	0	0	0	0	0	0	2
6/20/90	155.0	13:40	0	0	72	0	0	0	72	72
6/20/90	155.1	13:40	0	0	102	0	0	0	102	102
	156.0		0	0	0	0	0	0	0	61
	156.1		0	0	0	0	0	0	0	54
6/20/90	157.0	13:40	0	0	123	0	0	83	123	175
	157.1		0	0	0	0	0	0	0	1
	158.0		0	0	0	0	0	0	0	18
6/20/90	159.0	13:40	0	0	8	0	0	0	8	9
	160.0		0	0	0	0	0	0	0	45
	160.05		0	0	0	0	0	0	0	3
	160.1		0	0	0	0	0	0	0	9
6/20/90	161.0	13:41	0	0	55	0	0	0	55	55
	161.1		0	0	0	0	0	0	0	32

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
	161.2		0	0	0	0	0	0	0	6
6/19/90	162.0	14:45	0	0	54	0	0	91	91	149
6/20/90	162.1	13:41	0	0	14	0	0	0	14	14
	162.2		0	0	0	0	0	0	0	9
6/20/90	163.0	13:41	0	0	19	0	0	0	19	19
6/20/90	164.0	13:53	0	0	149	0	0	0	149	149
6/20/90	164.7	14:00	0	0	0	0	0	0	0	41
6/20/90	165.0	15:00	0	0	74	0	0	89	89	89
6/20/90	166.0	14:07	0	0	190	0	0	0	190	190
	167.0		0	0	0	0	0	0	0	169
	167.8		0	0	0	0	0	0	0	1
	168.0		0	0	0	0	0	0	0	29
6/20/90	169.0	14:12	0	0	15	0	0	0	15	40
	170.0		0	0	0	0	0	0	0	1
	170.1		0	0	0	0	0	0	0	1
6/20/90	171.0	14:15	0	0	78	0	0	0	78	78
	172.0		0	0	0	0	0	0	0	145
6/20/90	173.0	14:16	0	0	34	0	0	0	34	53
6/20/90	174.0	14:16	0	0	49	0	0	0	49	139
6/20/90	175.0	14:17	0	0	11	0	0	0	11	81
	175.5		0	0	0	0	0	0	0	1
6/20/90	176.0	14:23	0	0	17	0	0	0	17	31
	177.0		0	0	0	0	0	0	0	124
6/20/90	178.0	14:24	0	0	2	0	0	0	2	116
	179.0		0	0	0	0	0	0	0	59
	180.0		0	0	0	0	0	0	0	44
	181.0		0	0	0	0	0	0	0	17
6/20/90	182.0	14:25	0	0	9	0	0	0	9	26
	182.1		0	0	0	0	0	0	0	3
	182.2		0	0	0	0	0	0	0	4
	182.7		0	0	0	0	0	0	0	1
	183.0		0	0	0	0	0	0	0	4
6/20/90	184.0	14:25	0	0	2	0	0	0	2	2
6/20/90	185.0	14:26	0	0	19	0	0	0	19	43
	186.0		0	0	0	0	0	0	0	12
	186.1		0	0	0	0	0	0	0	1
	187.0		0	0	0	0	0	0	0	8
	187.7		0	0	0	0	0	0	0	1
6/20/90	188.0	14:28	0	0	167	0	0	0	167	185
	189.0		0	0	0	0	0	0	0	11
6/20/90	190.0	14:29	0	0	99	0	0	0	99	105
6/20/90	191.0	14:32	0	0	73	0	0	0	73	73
	191.1		0	0	0	0	0	0	0	6
	192.0		0	0	0	0	0	0	0	34

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
	193.0		0	0	0	0	0	0	0	24
	193.1		0	0	0	0	0	0	0	5
6/20/90	194.0	14:32	0	0	36	0	0	0	36	54
	194.1		0	0	0	0	0	0	0	1
6/20/90	195.0	14:39	0	0	125	0	0	0	125	144
	195.1		0	0	0	0	0	0	0	146
	196.0		0	0	0	0	0	0	0	47
	196.1		0	0	0	0	0	0	0	33
6/20/90	197.0	14:41	0	0	113	0	0	0	113	122
	197.1		0	0	0	0	0	0	0	100
6/20/90	198.0	14:41	0	0	135	0	0	0	135	135
6/20/90	198.1	14:42	0	0	22	0	0	0	22	25
6/20/90	199.0	14:42	0	0	11	0	0	0	11	131
	199.5		0	0	0	0	0	0	0	24
	200.0		0	0	0	0	0	0	0	58
	200.1		0	0	0	0	0	0	0	24
	201.0		0	0	0	0	0	0	0	68
	201.1		0	0	0	0	0	0	0	3
6/20/90	202.0	14:49	0	0	121	0	0	0	121	121
	202.1		0	0	0	0	0	0	0	1
	203.0		0	0	0	0	0	0	0	67
6/19/90	204.0	10:28	0	0	98	0	0	0	98	98
6/19/90	205.0	10:30	0	0	127	0	0	0	127	328
6/19/90	206.0	10:26	0	0	52	0	0	0	52	53
6/19/90	207.0	10:42	0	0	34	0	0	0	34	74
6/19/90	208.0	10:44	0	0	10	0	0	0	10	17
6/19/90	209.0	10:07	0	0	0	0	0	0	0	65
6/19/90	210.0	10:00	0	0	0	0	0	0	0	18
6/19/90	210.8	10:00	0	0	0	0	0	0	0	13
6/22/90	211.0	16:27	0	0	0	0	0	0	0	30
6/20/90	212.0	14:22	0	0	0	0	0	0	0	97
6/20/90	212.5	09:56	0	0	2	0	0	0	2	8
6/20/90	213.0	09:53	0	0	34	0	0	0	34	123
	214.0		0	0	0	0	0	0	0	34
6/20/90	215.0	15:00	0	0	67	0	0	0	67	67
	215.1		0	0	0	0	0	0	0	1
6/20/90	216.0	15:03	0	0	2	0	0	0	2	5
	216.1		0	0	0	0	0	0	0	1
6/20/90	217.0	15:06	0	0	168	0	0	0	168	182
	217.1		0	0	0	0	0	0	0	65
6/20/90	218.0	15:09	0	0	152	0	0	0	152	193
	218.1		0	0	0	0	0	0	0	24
	219.0		0	0	0	0	0	0	0	25
	219.1		0	0	0	0	0	0	0	1

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
	219.2		0	0	0	0	0	0	0	1
	219.3		0	0	0	0	0	0	0	4
6/20/90	220.0	15:28	0	0	91	0	0	75	91	93
6/18/90	221.0	13:45	0	0	554	0	0	676	676	831
	222.0		0	0	0	0	0	0	0	11
6/20/90	223.0	15:31	0	0	0	0	0	0	0	3
6/20/90	224.0	L 14:30	0	0	48	0	0	100	100	509
6/20/90	225.0	16:00	0	0	380	0	0	386	386	649
	226.0		0	0	0	0	0	0	0	66
	226.1		0	0	0	0	0	0	0	35
	226.2		0	0	0	0	0	0	0	72
	226.3		0	0	0	0	0	0	0	12
	227.0		0	0	0	0	0	0	0	34
	228.0		0	0	0	0	0	0	0	29
	229.0		0	0	0	0	0	0	0	6
	230.0		0	0	0	0	0	0	0	124
6/20/90	231.0	15:43	0	0	12	0	0	0	12	245
6/20/90	232.0	15:44	0	0	83	0	0	0	83	90
	232.1		0	0	0	0	0	0	0	28
	232.2		0	0	0	0	0	0	0	70
6/20/90	232.3	15:44	0	0	10	0	0	0	10	17
	233.0		0	0	0	0	0	0	0	31
6/20/90	234.0	15:45	0	0	3	0	0	0	3	13
6/20/90	235.0	15:45	0	0	17	0	0	0	17	17
6/20/90	235.1	15:45	0	0	2	0	0	0	2	2
	236.0		0	0	0	0	0	0	0	19
	237.0		0	0	0	0	0	0	0	1
	238.0		0	0	0	0	0	0	0	20
	239.0		0	0	0	0	0	0	0	46
	240.0		0	0	0	0	0	0	0	10
	240.1		0	0	0	0	0	0	0	3
	241.0		0	0	0	0	0	0	0	135
	242.0		0	0	0	0	0	0	0	2
	242.1		0	0	0	0	0	0	0	1
6/19/90	242.5	12:49	0	0	28	0	0	0	28	28
6/19/90	243.0	12:44	0	0	32	0	0	0	32	111
6/19/90	244.0	12:45	0	0	186	0	0	0	186	234
	244.1		0	0	0	0	0	0	0	1
6/19/90	245.0	12:44	0	0	286	0	0	0	286	419
	245.1		0	0	0	0	0	0	0	1
6/19/90	246.0	12:45	0	0	35	0	0	0	35	35
6/19/90	247.0	12:46	0	0	1	0	0	0	1	5
	247.1		0	0	0	0	0	0	0	41
6/19/90	248.0	12:48	0	0	347	0	0	0	347	431

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
	248.1			0	0	0	0	0	0	0	72
	248.5			0	0	0	0	0	0	0	30
	249.0			0	0	0	0	0	0	0	236
	249.1			0	0	0	0	0	0	0	173
6/19/90	249.5		12:58	0	0	0	0	0	0	0	22
6/19/90	250.0		12:51	0	0	1	0	0	0	1	3
6/19/90	251.0		13:00	0	0	75	0	0	0	75	115
6/19/90	252.0		13:04	0	0	0	0	0	0	0	12
6/19/90	253.0			0	0	0	0	0	0	0	12
	254.0			0	0	0	0	0	0	0	9
6/18/90	255.0		14:45	0	0	20	0	0	24	24	45
	255.1			0	0	0	0	0	0	0	16
6/18/90	256.0		14:15	0	0	0	0	0	3	3	8
6/18/90	257.0		14:15	0	0	0	0	0	38	38	60
	257.8			0	0	0	0	0	0	0	3
	258.0			0	0	0	0	0	0	0	2
	259.0			0	0	0	0	0	0	0	1
	259.1			0	0	0	0	0	0	0	1
	260.0			0	0	0	0	0	0	0	2
	260.1			0	0	0	0	0	0	0	1
	261.0			0	0	0	0	0	0	0	3
	261.1			0	0	0	0	0	0	0	10
6/19/90	261.2		13:13	0	0	6	0	0	1	6	18
6/21/90	262.0	C	15:00	0	0	103	0	0	258	258	318
6/18/90	263.0		11:35	0	0	11	0	0	14	14	31
	263.1			0	0	0	0	0	0	0	21
	263.2			0	0	0	0	0	0	0	15
6/18/90	264.0		11:40	0	0	0	0	0	1	1	26
6/18/90	264.1		11:40	0	0	0	0	0	15	15	26
6/19/90	265.0	C	13:59	0	0	19	0	0	0	19	19
6/19/90	265.1		14:00	0	0	14	0	0	0	14	14
	266.0			0	0	0	0	0	0	0	8
	267.0			0	0	0	0	0	0	0	5
	268.0			0	0	0	0	0	0	0	37
	268.1			0	0	0	0	0	0	0	4
	269.0			0	0	0	0	0	0	0	13
	270.0			0	0	0	0	0	0	0	9
	270.1			0	0	0	0	0	0	0	13
	270.2			0	0	0	0	0	0	0	1
6/19/90	271.0		14:01	0	0	14	0	0	0	14	28
6/18/90	272.0		14:02	0	0	4	0	0	0	4	14
	272.1			0	0	0	0	0	0	0	1
6/19/90	272.2		14:02	0	0	2	0	0	0	2	2
6/19/90	273.0		14:03	0	0	41	0	0	0	41	70

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
	273.1		0	0	0	0	0	0	0	1
6/18/90	274.0	14:03	0	0	21	0	0	0	21	36
	274.1		0	0	0	0	0	0	0	17
6/19/90	275.0	14:04	0	0	20	0	0	0	20	37
	276.0		0	0	0	0	0	0	0	39
6/19/90	276.1	14:05	0	0	18	0	0	0	18	29
	277.0		0	0	0	0	0	0	0	51
	277.1		0	0	0	0	0	0	0	3
	278.0		0	0	0	0	0	0	0	6
	279.0		0	0	0	0	0	0	0	1
	280.0		0	0	0	0	0	0	0	9
6/18/90	281.0	14:07	0	0	21	0	0	0	21	57
6/19/90	282.0	14:10	0	0	17	0	0	0	17	50
6/18/90	282.1	14:09	0	0	11	0	0	0	11	11
6/18/90	283.0	14:12	0	0	5	0	0	0	5	10
6/19/90	283.1	14:14	0	0	5	0	0	0	5	5
6/18/90	283.15	14:12	0	0	4	0	0	0	4	4
6/19/90	283.2	14:16	0	0	19	0	0	0	19	26
6/19/90	284.0	C 14:17	0	0	69	0	0	0	110	69
	284.1		0	0	0	0	0	0	0	5
	284.2		0	0	0	0	0	0	0	3
	284.3		0	0	0	0	0	0	0	1
	285.0		0	0	0	0	0	0	0	57
	285.1		0	0	0	0	0	0	0	16
	285.2		0	0	0	0	0	0	0	10
	285.4		0	0	0	0	0	0	0	4
	286.0		0	0	0	0	0	0	0	6
	286.1		0	0	0	0	0	0	0	9
6/19/90	286.5	14:18	0	0	2	0	0	0	2	16
6/19/90	287.0	C 14:19	0	0	13	0	0	0	60	67
	287.1		0	0	0	0	0	0	0	3
	287.2		0	0	0	0	0	0	0	1
	287.3		0	0	0	0	0	0	0	2
6/19/90	288.0	C 14:21	0	0	2	0	0	0	2	10
	289.0		0	0	0	0	0	0	0	17
	290.0		0	0	0	0	0	0	0	34
6/19/90	291.0	C 14:32	0	0	20	0	0	0	20	20
	291.1		0	0	0	0	0	0	0	1
	292.0		0	0	0	0	0	0	0	1
6/19/90	292.1	C 14:40	0	0	15	0	0	0	15	15
6/19/90	293.0	C	0	0	0	0	0	0	30	30
6/19/90	293.5	C	0	0	10	0	0	0	30	43
6/19/90	294.0	C 14:41	0	0	0	0	0	0	30	30
	294.1		0	0	0	0	0	0	0	5

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
6/19/90	295.0	C		0	0	0	0	0	0	2	40
6/19/90	296.0	C		0	0	2	0	0	0	15	115
	296.1			0	0	0	0	0	0	0	2
	297.0			0	0	0	0	0	0	0	9
	297.1			0	0	0	0	0	0	0	35
6/19/90	298.0	C	14:42	0	0	0	0	0	0	2	26
	298.1			0	0	0	0	0	0	0	48
	298.2			0	0	0	0	0	0	0	4
6/19/90	299.0	C		0	0	2	0	0	0	2	36
6/19/90	299.1	C	14:28	0	0	0	0	0	0	10	29
6/19/90	300.0	C	14:43	0	0	18	0	0	0	18	18
	300.1			0	0	0	0	0	0	0	1
6/19/90	301.0	C	14:43	0	0	4	0	0	0	15	15
	301.1			0	0	0	0	0	0	0	23
6/19/90	302.0	C	14:44	0	0	0	0	0	0	20	125
6/19/90	303.0	C	14:45	0	0	0	0	0	0	20	20
	304.0			0	0	0	0	0	0	0	47
6/19/90	305.0	C	14:45	0	0	0	0	0	0	20	53
	306.0			0	0	0	0	0	0	0	1
6/19/90	307.0	C	14:45	0	0	0	0	0	0	30	164
	308.0			0	0	0	0	0	0	0	74
	309.0			0	0	0	0	0	0	0	45
	310.0			0	0	0	0	0	0	0	3
	310.1			0	0	0	0	0	0	0	1
6/19/90	311.0	C	14:46	0	0	3	0	0	0	10	20
6/19/90	312.0	C	14:47	0	0	0	0	0	0	10	21
	312.1			0	0	0	0	0	0	0	27
	313.0			0	0	0	0	0	0	0	79
	313.1			0	0	0	0	0	0	0	9
	314.0			0	0	0	0	0	0	0	4
6/19/90	315.0	C	14:49	0	0	75	0	0	0	75	75
	315.1			0	0	0	0	0	0	0	4
	315.2			0	0	0	0	0	0	0	9
	315.6			0	0	0	0	0	0	0	21
6/19/90	316.0	C	14:52	0	0	24	0	0	0	24	35
	316.1			0	0	0	0	0	0	0	3
	317.0			0	0	0	0	0	0	0	13
	317.1			0	0	0	0	0	0	0	3
6/19/90	318.0	C	15:55	0	0	47	0	0	0	47	47
	318.1			0	0	0	0	0	0	0	25
	319.0			0	0	0	0	0	0	0	7
	319.1			0	0	0	0	0	0	0	4
6/19/90	320.0	C	14:58	0	0	29	0	0	0	29	69
6/19/90	321.0	C	14:58	0	0	4	0	0	0	10	32

DATE	SITE	P TIME R O B	FA	FP	FT	GA	GP	GT	ET	MAX
6/19/90	322.0	C 14:58	0	0	0	0	0	0	25	25
	323.0		0	0	0	0	0	0	0	28
6/19/90	324.0	C 14:58	0	0	0	0	0	0	0	53
	324.1		0	0	0	0	0	0	0	2
6/19/90	324.5	C 14:59	0	0	29	0	0	0	29	29
6/19/90	324.9	C 15:01	0	0	1	0	0	0	1	1
6/19/90	325.0	C 15:02	0	0	15	0	0	0	15	34
6/19/90	325.1	C 15:10	0	0	42	0	0	0	42	74
	325.2		0	0	0	0	0	0	0	15
6/19/90	325.7	C 15:13	0	0	19	0	0	0	19	19
6/19/90	326.0	C 15:15	0	0	68	0	0	0	80	145
6/19/90	327.0	C 15:19	0	0	9	0	0	0	9	48
	327.1		0	0	0	0	0	0	0	57
6/19/90	328.0	C 15:20	0	0	19	0	0	0	19	49
6/19/90	329.0	C 15:21	0	0	84	0	0	0	84	84
	329.1		0	0	0	0	0	0	0	2
	329.5		0	0	0	0	0	0	0	1
6/19/90	330.0	C 15:24	0	0	4	0	0	0	4	42
	331.0		0	0	0	0	0	0	0	1
6/19/90	331.1	C 15:25	0	0	5	0	0	0	5	11
6/19/90	332.0	C 15:27	0	0	53	0	0	0	53	176
	332.1		0	0	0	0	0	0	0	14
6/19/90	332.5	15:28	0	0	0	0	0	0	1	17
6/19/90	333.0	C 15:29	0	0	65	0	0	0	65	65
6/19/90	334.0	C 15:30	0	0	26	0	0	0	26	73
	335.0		0	0	0	0	0	0	0	36
	335.4		0	0	0	0	0	0	0	5
	335.2		0	0	0	0	0	0	0	1
	335.8		0	0	0	0	0	0	0	25
6/19/90	336.0	C 15:31	0	0	0	0	0	0	20	23
6/19/90	336.05	C 15:33	0	0	0	0	0	0	10	11
	336.1		0	0	0	0	0	0	0	10
	336.2		0	0	0	0	0	0	0	1
	337.0		0	0	0	0	0	0	0	37
6/19/90	337.1	C 15:34	0	0	3	0	0	0	20	20
6/19/90	338.0	C 15:34	0	0	63	0	0	0	63	74
	338.1		0	0	0	0	0	0	0	1
6/19/90	338.2	C 15:40	0	0	14	0	0	0	14	14
	339.0		0	0	0	0	0	0	0	38
	339.1		0	0	0	0	0	0	0	17
6/19/90	340.0	C 15:42	0	0	28	0	0	0	28	28
6/19/90	340.05	C 15:42	0	0	0	0	0	0	15	15
	340.1		0	0	0	0	0	0	0	23
6/19/90	341.0	C 15:43	0	0	96	0	0	0	96	98

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
6/19/90	342.0	C	15:44	0	0	0	0	0	0	5	32
	342.1			0	0	0	0	0	0	0	31
	343.0			0	0	0	0	0	0	0	34
	343.1			0	0	0	0	0	0	0	20
	344.0			0	0	0	0	0	0	0	22
	344.1			0	0	0	0	0	0	0	15
	345.0			0	0	0	0	0	0	0	31
	345.05			0	0	0	0	0	0	0	13
	345.1			0	0	0	0	0	0	0	24
	345.2			0	0	0	0	0	0	0	25
	345.3			0	0	0	0	0	0	0	21
	346.0			0	0	0	0	0	0	0	41
	347.0			0	0	0	0	0	0	0	21
	348.0			0	0	0	0	0	0	0	53
	349.0			0	0	0	0	0	0	0	51
	349.1			0	0	0	0	0	0	0	16
	350.0			0	0	0	0	0	0	0	27
	351.0			0	0	0	0	0	0	0	18
6/21/90	352.0		16:45	0	0	0	0	0	127	127	183
	352.1			0	0	0	0	0	0	0	39
6/22/90	352.2	C	14:10	0	0	0	0	0	0	15	26
6/22/90	353.0	C	14:09	0	0	0	0	0	0	40	55
6/22/90	354.0	C	14:08	0	0	0	0	0	0	68	68
6/22/90	355.0		14:05	0	0	0	0	0	0	1	20
	355.1			0	0	0	0	0	0	0	4
6/22/90	355.5	C	14:04	0	0	0	0	0	0	30	32
6/22/90	356.0	C	14:02	0	0	0	0	0	0	30	67
	356.1			0	0	0	0	0	0	0	100
6/22/90	357.0	C	14:01	0	0	0	0	0	0	5	14
	358.0			0	0	0	0	0	0	0	25
6/22/90	359.0	C	14:00	0	0	0	0	0	0	2	14
	359.1			0	0	0	0	0	0	0	1
	360.0			0	0	0	0	0	0	0	58
	361.0			0	0	0	0	0	0	0	186
	362.0			0	0	0	0	0	0	0	239
6/22/90	363.0	C	13:55	0	0	0	0	0	0	500	839
	364.0			0	0	0	0	0	0	0	13
6/21/90	365.0		14:37	0	0	37	0	0	0	37	154
6/21/90	366.0		14:39	0	0	2	0	0	0	2	240
	366.1			0	0	0	0	0	0	0	142
6/21/90	367.0		14:43	0	0	2	0	0	0	2	10
	367.1			0	0	0	0	0	0	0	26
	367.2			0	0	0	0	0	0	0	23
6/22/90	368.0		13:45	0	0	17	0	0	0	17	43

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
	368.1			0	0	0	0	0	0	0	33
	369.0			0	0	0	0	0	0	0	13
	369.1			0	0	0	0	0	0	0	1
	370.0			0	0	0	0	0	0	0	3
	371.0			0	0	0	0	0	0	0	25
	372.0			0	0	0	0	0	0	0	3
	372.1			0	0	0	0	0	0	0	16
6/22/90	373.0	C	13:26	0	0	125	0	0	0	125	206
6/22/90	373.1	C	10:36	0	0	7	0	0	0	7	34
	374.0			0	0	0	0	0	0	0	43
	375.0			0	0	0	0	0	0	0	10
	376.0			0	0	0	0	0	0	0	4
	377.0			0	0	0	0	0	0	0	4
	378.0			0	0	0	0	0	0	0	5
	378.1			0	0	0	0	0	0	0	2
	379.0			0	0	0	0	0	0	0	4
	380.0			0	0	0	0	0	0	0	15
	380.1			0	0	0	0	0	0	0	4
	380.2			0	0	0	0	0	0	0	2
	381.0			0	0	0	0	0	0	0	73
	381.1			0	0	0	0	0	0	0	441
	381.2			0	0	0	0	0	0	0	81
	381.3			0	0	0	0	0	0	0	15
6/19/90	382.0	C	14:15	0	0	489	0	0	513	513	1060
6/21/90	383.0	C	15:21	0	0	576	0	0	0	576	830
6/22/90	384.0	C	11:26	0	0	39	0	0	0	39	518
6/21/90	384.1	C	15:33	0	0	66	0	0	0	66	66
6/22/90	385.0	C	11:32	0	0	0	0	0	0	120	170
6/22/90	386.0	C	11:39	0	0	11	0	0	0	11	11
	386.1			0	0	0	0	0	0	0	1
6/22/90	387.0	C	11:41	0	0	0	0	0	0	25	25
6/20/90	388.0		16:15	0	0	0	0	0	22	22	39
6/20/90	389.0		15:45	0	0	0	0	0	9	9	31
6/22/90	390.0	C	11:41	0	0	0	0	0	0	10	79
	390.1			0	0	0	0	0	0	0	14
	391.0			0	0	0	0	0	0	0	43
	392.0			0	0	0	0	0	0	0	19
6/20/90	393.0		14:45	0	0	0	0	0	2	2	93
6/20/90	394.0		16:15	0	0	0	0	0	13	13	29
6/21/90	395.0	C	15:45	0	0	0	0	0	34	34	42
	395.1			0	0	0	0	0	0	0	1
6/22/90	396.0	C	11:42	0	0	0	0	0	0	2	23
	396.1			0	0	0	0	0	0	0	16
6/22/90	397.0	C	11:43	0	0	0	0	0	0	10	12

DATE	SITE	P R O B	TIME	FA	FP	FT	GA	GP	GT	ET	MAX
	398.0			0	0	0	0	0	0	0	43
	398.1			0	0	0	0	0	0	0	6
	399.0			0	0	0	0	0	0	0	69
	399.1			0	0	0	0	0	0	0	25
6/22/90	400.0	C	11:44	0	0	0	0	0	0	41	67
	401.0			0	0	0	0	0	0	0	24
	402.0			0	0	0	0	0	0	0	15
	403.0			0	0	0	0	0	0	0	27
	404.0			0	0	0	0	0	0	0	31
	405.0			0	0	0	0	0	0	0	30
	405.05			0	0	0	0	0	0	0	3
	405.1			0	0	0	0	0	0	0	1
	406.0			0	0	0	0	0	0	0	55
	407.0			0	0	0	0	0	0	0	9
	407.1			0	0	0	0	0	0	0	13
6/22/90	408.0	C	11:52	0	0	0	0	0	0	3	10
	409.0			0	0	0	0	0	0	0	341
	410.0			0	0	0	0	0	0	0	48
	411.0			0	0	0	0	0	0	0	20
	412.0			0	0	0	0	0	0	0	56
	413.0			0	0	0	0	0	0	0	96
	413.1			0	0	0	0	0	0	0	1
6/22/90	414.0	C	12:42	0	0	424	0	0	0	424	516
	415.0			0	0	0	0	0	0	0	100
	416.0			0	0	0	0	0	0	0	61
	417.0			0	0	0	0	0	0	0	3
6/22/90	418.0	C	12:35	0	0	0	0	0	0	210	542
	419.0			0	0	0	0	0	0	0	3
	420.0			0	0	0	0	0	0	0	37
	421.0			0	0	0	0	0	0	0	9
6/19/90	422.0		14:30	0	0	0	0	0	58	58	84

APPENDIX II. Harbor seal mainland counts by site and census (82R=April 1982, 83R= April 1983, 82=May-June 1982, 83=June 1983, 84=June 1984, 85=May-June 1985, 86=June 1986, 87=June 1987, 88=June 1988, 89=June 1989, 90=June 1990); sites are underlined for those censuses conducted during pupping season. Sites are blank until the census when seals were first observed or for censuses when not surveyed.

YEAR	82R	83R	82	83	84	85	86	87	88	89	90
SITE											
0.1					7	0	0				
1.0	0	0	0	0	0	0	0	0	0	0	0
2.0	0	0	0	0	0	0	0	10	4	0	0
3.0	19	24	6	13	9	16	13	4	12	25	37
4.0	<u>43</u>	<u>67</u>	85	95	94	72	99	94	120	139	138
5.0	0	<u>93</u>	0	0	5	48	68	31	87	3	22
6.0	8	13	0	0	22	0	3	41	70	66	33
7.0	<u>14</u>	23	53	0	0	52	35	15	14	0	21
8.0	0	0	0	0	0	0	0	11	0	0	0
9.0	0	0	0	0	0	19	4	38	18	21	22
10.0	<u>12</u>	0	0	205	29	0	62	4	0	0	0
10.1							1	0	0	0	0
10.8								3	0	1	0
11.0	<u>242</u>	<u>223</u>	387	554	375	388	385	303	203	377	294
11.1								56	213	16	196
12.0	3	4	38	0	18	30	18	12	0	29	24
13.0	<u>19</u>	0	9	0	0	0	1	0	0	0	0
13.1		2		0	0	0	0	12	5	0	0
14.0	0	0	0	13	0	0	1	0	0	9	0
14.1				31	0	13	0	6	0	263	263
14.2								122	0	0	48
14.4							290	215	173	0	314
14.8							70	74	98	0	59
15.0	0	<u>143</u>	24	247	0	59	0	46	150	0	0
15.1						228	0	72	75	94	43
15.2						119	0	0	0	0	0
16.0	0	0	0	49	71	78	107	56	0	239	0
17.0	0	23	41	0	0	0	0	0	37	0	0
17.1									0	0	0
18.0	<u>17</u>	0	18	0	0	0	0	0	0	0	0
19.0	<u>70</u>	<u>21</u>	0	94	100	70	92	53	50	65	0
19.1								4	7	0	69
19.2								13	0	0	0
20.0	2	0	18	0	0	33	43	0	32	34	0
21.0	0	0	0	4	0	6	3	0	0	19	0
21.1				10	0	0	0	0	0	0	0
21.2					26	0	0	0	0	0	0
21.3					2	0	0	0	0	0	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
21.5								8	0	0	0
22.0	<u>60</u>	18	46	51	62	67	67	26	48	52	68
23.0	0	0	0	0	0	0	0	0	0	10	0
23.1				2	0	34	0	0	0	3	9
24.0	<u>19</u>	0	0	58	0	5	0	3	0	0	0
25.0	81	<u>39</u>	138	0	30	44	110	28	36	36	77
26.0	51	0	0	0	0	0	0	0	0	4	19
26.1	0	22	0	0	0	0	0	0	0	0	0
27.0	22	0	29	0	0	19	0	0	13	0	14
28.0	0	0	0	0	0	0	0	19	0	0	0
28.1											20
29.0	0	2	0	0	0	0	0	0	1	0	0
30.0	0	0	0	0	0	0	0	0	0	0	0
31.0	40	0	67	0	0	0	0	13	0	0	5
31.1						12	6	0	45	32	52
32.0	0	0	1	0	0	0	0	0	0	0	0
32.1									52	93	82
33.0	<u>13</u>	14	0	0	0	0	0	7	22	0	17
33.1		16		0	0	0	0	0	0	0	0
33.2						28	17	17	6	56	98
34.0	11	<u>3</u>	0	0	20	0	10	0	17	38	42
34.1					38	0	0	0	0	0	0
35.0	<u>20</u>	14	58	20	2	29	26	19	59	41	67
35.1		3		0	0	0	0	0	0	0	0
36.0	0	0	22	13	15	18	32	0	42	19	35
36.1											2
37.0	<u>16</u>	0	60	0	61	15	34	48	56	27	80
38.0	<u>9</u>	0	0	0	0	0	0	0	68	48	0
39.0	<u>29</u>	0	132	66	124	55	146	118	178	163	163
39.05								15	0	0	42
39.1							9	2	0	0	129
39.2											8
40.0	0	0	0	0	0	0	0	0	0	0	0
40.1						1	0	0	0	0	0
41.0	23	5	7	5	21	0	41	45	18	54	78
41.05											24
41.1					49	0	0	0	94	116	84
41.2							14	3	73	44	54
42.0	<u>17</u>	12	9	36	0	27	5	0	0	4	58
42.1				12	0	0	16	12	35	0	61
43.0	0	0	21	0	0	12	0	0	4	0	0
43.1		1		0	0	0	2	13	0	0	0
44.0	24	12	0	0	0	0	1	0	7	0	0
45.0	1	<u>22</u>	0	0	0	0	14	0	0	0	1
46.0	<u>41</u>	<u>37</u>	29	41	33	31	29	38	39	35	32
46.1		1		0	0	0	0	0	0	0	0
47.0	1	0	0	0	0	0	0	0	0	0	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
48.0	19	0	0	0	0	0	0	0	0	0	0
49.0	<u>15</u>	0	0	10	0	95	53	27	50	45	41
50.0	86	0	53	0	0	0	0	6	44	0	0
51.0	<u>15</u>	0	0	0	0	0	0	0	62	0	0
52.0	<u>23</u>	0	24	0	0	100	24	0	126	0	10
53.0	<u>90</u>	<u>80</u>	197	27	13	60	97	85	6	139	16
54.0	0	0	49	43	0	63	14	0	0	96	27
55.0	0	29	35	101	0	0	47	0	0	130	124
55.1					30	12	0	75	0	28	0
55.2							12	0	0	20	0
55.3								1	0	0	0
55.4											9
55.5								1	13	0	16
56.0	<u>30</u>	<u>50</u>	0	0	0	8	0	0	42	0	0
56.1		39		12	0	0	0	0	0	0	0
56.2		7		0	0	2	0	33	0	11	0
57.0	46	0	0	2	0	0	0	0	0	0	0
57.1						10	30	0	0	0	16
57.2						14	0	0	0	0	3
58.0	0	0	0	18	15	0	15	20	0	0	12
58.1				51	0	0	34	0	0	47	29
58.5									18	0	0
58.7								6	21	0	19
58.9								10	43	0	7
59.0	3	0	0	0	0	8	0	17	14	23	0
60.0	10	11	0	0	0	0	0	0	0	0	0
61.0	0	0	4	0	12	12	0	23	18	0	25
61.8									7	0	0
62.0	0	0	17	0	0	0	0	0	0	0	0
63.0	<u>8</u>	0	19	0	0	0	0	0	0	0	0
64.0	<u>27</u>	11	0	9	0	0	11	0	0	0	0
64.5									2	0	0
65.0	<u>32</u>	8	42	43	0	0	21	0	0	0	0
65.1		1		0	0	0	0	0	0	0	0
65.2					28	2	0	51	0	51	61
66.0	<u>17</u>	14	0	51	15	0	0	4	0	7	24
66.1		10		8	0	9	45	39	43	0	0
66.2		1		0	0	0	0	0	0	0	0
67.0	8	0	0	0	0	3	6	0	0	65	30
68.0	0	0	0	0	14	0	0	0	0	0	3
68.15									11	0	19
68.1						15	0	12	21	0	0
68.2							13	0	0	42	0
68.25										43	10
68.3							1	0	0	1	0
69.0	9	0	15	0	0	0	4	5	4	14	0
69.1					15	0	9	5	0	0	12

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
70.0	18	10	11	0	0	0	28	10	0	0	12
70.1				8	0	0	0	0	0	0	0
71.0	23	0	8	87	28	56	74	27	101	102	104
71.1					2	0	0	0	0	0	0
72.0	<u>68</u>	0	23	0	0	21	20	0	0	0	0
73.0	8	13	0	0	0	0	0	0	0	0	0
73.1	0	5	0	0	0	1	0	0	0	0	15
74.0	<u>33</u>	<u>33</u>	50	48	33	45	55	49	61	63	52
74.1							2	0	0	0	0
75.0	17	7	0	23	20	3	11	32	0	69	0
75.1							2	0	0	0	0
76.0	71	48	0	90	25	58	82	51	75	102	82
76.1					40	0	24	6	0	0	0
77.0	5	0	0	17	0	0	0	0	0	8	33
77.1				1	0	0	4	0	0	23	0
78.0	<u>54</u>	<u>13</u>	41	0	0	0	25	39	38	0	0
79.0	<u>45</u>	0	48	34	30	0	36	27	43	41	73
79.1							4	0	0	0	0
80.0	12	0	33	0	0	0	0	0	0	0	0
80.1						16	0	14	0	11	18
81.0	0	0	0	0	0	8	0	0	0	0	0
81.1						8	0	0	0	0	0
81.2						20	0	0	0	0	0
81.3						10	0	24	13	21	26
82.0	0	0	0	0	13	0	0	0	0	0	0
83.0	0	0	0	3	0	0	0	0	0	0	0
84.0	0	0	0	0	0	11	4	7	14	0	13
85.0	67	14	122	64	77	37	109	102	74	120	66
86.0	25	26	18	4	0	0	3	0	0	0	0
86.8									0	0	0
87.0	80	0	138	101	121	28	53	46	79	131	175
87.1	0	0	0	0	0	0	0	0	0	0	0
88.0	0	0	0	0	0	0	0	0	0	0	0
89.0	0	0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	11	8
91.0	0	0	0	0	0	0	1	1	0	13	12
91.1	0			21	0	0	0	0	0	0	18
92.0	0	0	0	0	0	0	6	0	0	0	0
93.0	0	0	1	0	0	0	1	6	0	0	0
93.1					9	0	0	9	0	18	0
93.3										1	0
94.0	0	0	2	0	0	0	0	0	0	0	0
94.1						10	9	0	0	0	8
94.2						4	0	0	5	0	4
94.3						1	0	0	0	0	0
94.4							6	0	0	0	0
94.5							1	0	0	0	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
95.0	1	0	7	0	15	0	0	0	0	0	0
96.0	0	0	1	0	0	0	1	0	0	19	0
96.1					14	0	1	0	3	0	0
96.2						2	0	0	0	0	3
96.3						1	0	0	0	0	10
96.4						3	0	0	0	0	0
97.0	22	0	1	0	10	15	20	20	9	23	8
97.5											16
98.0	24	0	59	10	0	0	43	31	14	25	26
99.0	0	0	0	0	0	0	0	0	0	0	24
99.1						7	1	2	0	0	0
99.2						3	0	6	6	0	4
99.3											2
99.5								3	0	0	0
100.0	0	0	9	0	0	0	0	4	0	0	0
101.0	14	0	9	9	0	0	0	18	25	0	29
102.0	20	0	44	4	0	0	28	14	15	16	5
102.1							2	0	0	0	0
103.0	0	0	1	0	0	0	0	0	0	0	0
103.8									9	0	6
104.0	0	0	7	0	0	0	5	0	0	11	7
104.1							3	0	0	0	0
104.2							1	0	0	0	0
104.3							1	0	0	0	0
104.5										11	0
104.8											4
105.0	0	0	6	0	0	0	0	1	2	0	7
105.1							5	0	0	0	0
106.0	0	0	1	0	0	0	0	0	1	0	0
106.1							1	0	1	0	0
107.0	29	0	34	18	0	8	6	0	33	0	0
107.1							5	0	0	0	0
108.0	0	0	15	0	0	0	10	0	0	0	0
109.0	4	0	0	0	0	10	0	0	0	0	0
109.5											1
109.6											3
109.8											3
110.0	<u>128</u>	<u>150</u>	125	79	82	159	190	99	208	127	122
111.0	0	0	13	10	15	6	0	25	21	98	48
112.0	13	0	7	0	0	0	0	0	43	0	28
113.0	0	0	0	0	0	37	0	0	0	0	0
114.0	0	0	27	0	0	0	0	51	19	28	0
114.1		3		0	1	0	0	0	0	0	0
114.2		8		0	0	0	0	0	0	0	0
114.3							3	0	0	0	0
114.4							9	0	0	0	0
114.5							6	2	0	0	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
115.0	0	0	0	0	0	0	0	0	0	0	0
116.0	0	0	0	0	0	4	2	6	0	0	0
117.0	0	0	29	13	4	11	0	0	10	0	11
118.0	7	0	10	0	0	0	0	0	0	0	0
118.1							4	3	0	0	0
118.5									0	0	0
119.0	0	0	0	0	0	0	0	0	9	0	0
119.1						12	6	0	0	0	0
120.0	2	0	0	0	0	0	0	0	0	0	0
121.0	2	0	3	0	0	0	0	1	0	1	0
122.0	0	2	18	0	0	0	0	2	0	0	0
123.0	0	0	1	0	0	0	0	0	0	0	0
124.0	0	0	1	0	0	0	0	0	0	0	0
125.0	13	0	7	5	0	0	4	5	2	0	0
126.0	0	0	11	0	0	0	0	0	0	0	6
126.4											7
126.5								2	0	13	0
127.0	71	17	97	43	87	56	43	59	118	102	118
128.0	0	0	0	0	0	0	0	0	0	0	0
129.0	4	0	39	0	20	35	33	27	15	48	30
130.0	266	<u>106</u>	190	159	64	110	119	140	153	109	96
130.1							8	0	0	30	20
131.0	29	18	0	0	0	0	0	71	33	0	19
131.1		56		0	0	0	0	0	0	0	5
131.2		3		0	0	1	0	0	0	14	21
131.3					64	0	0	0	0	0	33
132.0	32	0	0	15	0	0	0	107	33	0	44
132.1							8	0	0	0	0
133.0	61	0	158	0	19	149	159	0	114	127	34
134.0	6	0	0	0	0	12	6	0	0	0	6
134.1						4	0	0	0	0	0
134.2						10	0	1	0	0	0
134.5							10	0	0	0	23
135.0	<u>38</u>	0	12	0	0	0	0	0	0	0	0
136.0	5	0	10	0	0	0	0	7	0	0	14
137.0	5	0	0	0	0	0	0	0	0	0	0
137.1				2	0	0	0	0	0	0	0
138.0	0	0	26	14	20	24	16	16	0	0	0
138.1							2	0	0	0	30
139.0	0	0	14	12	0	0	0	7	0	0	0
139.1							9	14	0	0	0
140.0	0	0	12	0	0	0	3	5	9	6	0
140.1		1		0	0	0	0	0	0	0	0
141.0	22	0	71	24	23	0	10	44	20	78	76
141.1		3		0	0	2	0	0	0	24	0
142.0	<u>11</u>	0	22	0	3	0	6	7	0	0	0
143.0	0	0	2	0	0	0	0	0	0	8	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
143.5								2	0	0	0
144.0	<u>28</u>	0	19	0	11	0	11	17	0	0	0
144.5								1	0	10	0
145.0	<u>25</u>	0	24	7	0	0	0	5	35	0	0
146.0	0	0	0	17	18	0	37	50	0	72	0
147.0	0	0	32	0	0	0	0	0	0	0	103
148.0	10	0	25	0	12	33	22	62	6	70	0
149.0	<u>36</u>	<u>51</u>	71	24	1	0	30	39	6	0	94
150.0	<u>51</u>	<u>56</u>	96	58	64	52	49	42	331	97	29
151.0	36	14	53	8	23	41	78	80	22	66	0
152.0	<u>29</u>	20	41	0	39	42	32	85	55	70	0
153.0	28	13	6	13	5	0	24	74	9	14	23
154.0	0	0	18	0	19	20	0	44	12	67	68
154.1					2	0	0	0	0	0	0
155.0	0	7	29	27	1	0	65	55	0	0	72
155.1						17	0	63	18	0	102
156.0	<u>14</u>	<u>31</u>	47	0	9	2	18	61	0	48	0
156.1	0	<u>14</u>	0	54	0	0	0	0	0	0	0
157.0	<u>145</u>	<u>129</u>	145	120	98	102	175	151	132	106	123
157.1							1	0	0	0	0
158.0	2	0	0	0	1	18	0	0	0	0	0
159.0	6	0	0	0	0	0	0	9	0	0	8
160.0	30	21	23	43	8	0	45	8	34	7	0
160.05							3	0	0	0	0
160.1		2		0	1	0	0	5	0	0	0
161.0	7	21	49	0	22	13	0	0	0	50	55
161.1						9	0	32	0	0	0
161.2						6	0	2	0	0	0
162.0	100	76	133	108	85	101	103	105	59	53	91
162.1		1		0	0	0	0	0	0	0	14
162.2										9	0
163.0	0	0	0	7	0	0	0	0	0	0	19
164.0	0	5	17	34	35	38	22	29	54	92	149
164.7									41	0	0
165.0	33	0	28	34	8	68	20	2	20	89	89
166.0	41	36	138	0	49	82	113	122	149	175	190
167.0	0	58	28	45	136	73	169	69	67	55	0
167.8									0	0	0
168.0	0	0	1	0	0	0	0	0	0	0	0
169.0	39	31	37	40	31	32	28	17	22	23	15
170.0	0	0	1	0	0	0	0	0	1	0	0
170.1							1	0	0	0	0
171.0	0	33	8	3	0	0	0	0	0	0	78
172.0	0	19	120	83	63	65	0	136	144	145	0
173.0	23	53	12	0	0	4	0	0	12	21	34
174.0	<u>80</u>	0	23	0	18	0	5	0	0	139	49
175.0	<u>76</u>	<u>46</u>	53	26	0	35	26	24	26	0	11

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
175.5										1	0
176.0	25	31	3	1	20	0	0	23	7	0	17
177.0	60	5	71	16	90	0	87	48	5	124	0
178.0	<u>43</u>	<u>43</u>	83	74	10	92	116	12	10	30	2
179.0	0	0	36	0	0	3	0	59	13	0	0
180.0	<u>21</u>	20	44	22	0	21	5	2	22	29	0
181.0	7	17	0	0	0	0	0	1	1	11	0
182.0	0	0	3	0	0	0	2	0	0	26	9
182.1						3	1	0	0	0	0
182.2							4	3	3	0	0
182.7									1	0	0
183.0	0	4	1	0	0	0	0	0	0	0	0
184.0	0	1	1	0	0	0	0	1	1	0	2
185.0	0	1	3	0	19	12	10	23	22	43	19
186.0	12	0	9	0	0	0	2	0	0	0	0
186.1							1	0	0	0	0
187.0	4	2	0	0	1	8	0	0	0	0	0
187.7										1	0
188.0	<u>50</u>	39	70	95	109	57	106	106	111	185	167
189.0	0	0	0	0	0	0	0	3	0	0	0
190.0	43	0	23	53	71	0	42	61	69	105	99
191.0	0	0	0	0	0	0	0	12	0	0	73
191.1							6	5	0	0	0
192.0	9	29	10	20	0	0	11	7	5	0	0
193.0	0	<u>24</u>	0	0	0	0	0	9	5	0	0
193.1						5	0	0	0	0	0
194.0	20	33	45	29	6	41	54	38	1	42	36
194.1							1	0	0	0	0
195.0	0	26	34	40	12	0	2	0	0	144	125
195.1		20		0	0	0	0	0	146	0	0
196.0	0	0	7	0	21	33	29	47	0	0	0
196.1						19	15	33	0	0	0
197.0	57	11	104	84	38	122	121	72	50	109	113
197.1		80		0	0	100	0	0	59	0	0
198.0	23	36	118	0	125	0	90	3	0	24	135
198.1							25	0	0	15	22
199.0	0	25	0	45	0	0	0	131	27	15	11
199.5										24	0
200.0	0	0	7	58	0	0	0	0	0	0	0
200.1						24	0	0	0	0	0
201.0	30	34	0	5	0	0	19	38	68	2	0
201.1						3	0	0	0	0	0
202.0	0	11	25	35	11	23	58	45	23	49	121
202.1					0	0	0	0	0	0	0
203.0	0	0	0	0	1	67	0	0	0	59	0
204.0	0	13	0	1	0	0	11	0	0	12	98
205.0	<u>283</u>	<u>154</u>	197	125	311	76	147	328	122	162	127

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
206.0	0	0	0	7	0	0	24	5	41	53	52
207.0	0	8	60	17	40	39	41	74	31	32	34
208.0	0	0	7	0	0	0	0	0	0	9	10
209.0	0	8	0	58	47	53	63	30	65	38	0
210.0	0	0	0	0	0	0	0	0	18	0	0
210.8								13	0	0	0
211.0	0	0	0	0	0	0	0	0	0	0	0
212.0	0	0	0	0	0	0	0	0	0	0	0
212.5										8	2
213.0	<u>40</u>	<u>71</u>	85	85	64	99	86	123	105	55	34
214.0	0	0	8	3	0	0	0	1	0	0	0
215.0	12	5	10	3	20	13	24	24	13	55	67
215.1					1	0	0	0	0	0	0
216.0	0	0	1	0	5	0	4	0	0	0	2
216.1							1	0	0	0	0
217.0	36	61	88	103	143	54	69	153	113	182	168
217.1					2	0	0	0	0	0	0
218.0	115	101	112	118	7	185	183	85	72	193	152
218.1		24		0	0	0	0	0	0	0	0
219.0	5	19	4	19	8	0	9	11	0	0	0
219.1						1	1	0	0	0	0
219.2						1	0	0	0	0	0
219.3						4	0	0	0	0	0
220.0	0	32	88	30	47	49	19	70	66	58	91
221.0	<u>465</u>	<u>634</u>	566	583	831	505	589	717	762	714	676
222.0	11	0	0	0	0	0	9	0	0	0	0
223.0	0	0	0	0	0	3	0	0	0	0	0
224.0	0	0	509	86	508	200	300	204	61	484	100
225.0	<u>543</u>	<u>400</u>	516	214	172	453	309	649	276	382	386
226.0	10	0	0	66	0	0	0	0	0	0	0
226.1				21	0	0	0	0	0	35	0
226.2				72	0	0	0	0	0	0	0
226.3				12	0	0	0	0	0	0	0
227.0	0	0	34	0	0	0	0	0	0	0	0
228.0	29	0	0	0	0	0	0	3	0	0	0
229.0	0	0	0	0	0	0	0	0	0	0	0
230.0	7	0	1	0	0	124	0	2	0	0	0
231.0	38	73	101	0	0	0	22	101	155	245	12
232.0	3	64	64	0	66	0	90	0	0	0	83
232.1					11	0	0	28	0	0	0
232.2					3	0	70	0	0	0	0
232.3							1	17	0	0	10
233.0	<u>24</u>	0	31	0	3	0	0	2	0	0	0
234.0	13	0	0	0	0	0	0	0	1	0	3
235.0	17	0	0	0	0	0	0	0	0	0	17
235.1											2
236.0	19	11	1	0	0	0	0	0	0	0	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
237.0	0	0	0	0	0	0	0	0	0	0	0
238.0	12	0	4	0	0	20	11	1	0	0	0
239.0	0	0	1	0	0	24	0	20	46	0	0
240.0	0	0	0	0	0	0	0	0	0	0	0
240.1		3		0	0	0	0	0	0	0	0
241.0	122	28	86	105	135	0	32	0	0	0	0
242.0	2	0	1	0	0	0	0	0	0	0	0
242.1		1		0	0	0	0	0	1	0	0
242.5											28
243.0	<u>53</u>	0	53	30	0	29	0	111	0	30	32
244.0	<u>59</u>	<u>41</u>	86	20	39	71	144	0	179	234	186
244.1				1	1	1	0	0	0	0	0
245.0	<u>165</u>	37	256	247	142	370	204	178	256	201	286
245.1							1	0	0	0	0
246.0	0	0	12	0	8	5	8	9	17	0	35
247.0	5	3	0	0	0	0	3	0	3	0	1
247.1									13	41	0
248.0	<u>338</u>	<u>289</u>	196	215	0	283	280	431	289	0	347
248.1					72	0	0	0	0	0	0
248.5							30	15	0	0	0
249.0	<u>27</u>	31	136	44	47	76	35	14	17	14	0
249.1						1	0	0	5	173	0
249.5							22	0	0	0	0
250.0	3	0	1	0	0	0	0	0	0	0	1
251.0	106	36	115	0	99	71	88	82	58	88	75
252.0	0	0	0	0	0	0	1	12	0	0	0
253.0	0	0	11	0	0	1	4	12	3	0	0
254.0	9	0	1	0	0	0	0	0	1	0	0
255.0	0	0	8	0	0	18	17	14	0	45	24
255.1					16	0	0	0	0	0	0
256.0	0	0	8	0	0	0	0	3	0	0	3
257.0	29	16	47	13	38	35	15	28	17	60	38
257.8									3	0	0
258.0	2	0	0	0	0	0	0	1	0	0	0
259.0	0	0	0	0	0	0	0	0	0	0	0
259.1							1	0	0	0	0
260.0	2	0	0	0	0	0	0	0	0	0	0
260.1							1	0	0	0	0
261.0	0	0	0	0	0	0	0	0	0	0	0
261.1		10		0	0	7	1	0	0	0	0
261.2		8		6	0	0	18	8	3	0	6
262.0	<u>119</u>	183	127	140	93	188	258	239	226	318	258
263.0	31	0	0	0	0	0	0	0	25	16	14
263.1						21	0	1	0	0	0
263.2						8	0	3	15	0	0
264.0	2	0	0	0	26	0	0	12	0	0	1
264.1							12	24	26	25	15

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
265.0	0	0	0	0	1	0	0	0	0	0	19
265.1						5	4	4	0	0	14
266.0	2	0	8	0	0	0	0	0	0	0	0
267.0	5	0	0	0	3	0	0	0	0	0	0
268.0	8	16	0	0	5	14	15	33	37	35	0
268.1				2	0	4	0	0	0	0	0
269.0	12	0	13	0	0	0	0	0	0	0	0
270.0	0	0	0	0	0	1	0	0	0	0	0
270.1		3		0	0	0	1	0	0	4	0
270.2		1		0	0	0	0	0	0	0	0
271.0	28	0	8	0	10	21	14	18	11	14	14
272.0	1	0	12	6	14	0	0	0	0	9	4
272.1					1	0	0	0	0	0	0
272.2											2
273.0	<u>70</u>	34	49	24	6	4	10	23	0	44	41
273.1							1	0	0	0	0
274.0	13	22	18	0	3	0	4	33	25	36	21
274.1		1		0	3	17	0	0	0	0	0
275.0	0	0	20	17	10	0	12	12	3	37	20
276.0	3	0	0	0	0	21	0	0	6	39	0
276.1							29	24	16	0	18
277.0	27	0	51	0	15	36	37	20	0	0	0
277.1		3		0	0	0	1	0	0	0	0
278.0	0	0	0	0	0	0	0	0	0	0	0
279.0	0	0	1	0	0	0	0	0	0	0	0
280.0	9	3	0	0	0	0	0	0	0	0	0
281.0	0	0	21	0	15	57	32	20	24	28	21
282.0	11	31	0	50	48	0	0	11	21	16	17
282.1						3	2	3	7	4	11
283.0	10	0	0	0	0	0	0	0	0	2	5
283.1					1	0	1	0	1	0	5
283.15											4
283.2						10	12	12	26	21	19
284.0	24	14	29	0	0	14	5	9	12	0	110
284.1				5	0	0	0	0	0	0	0
284.2					3	0	0	0	0	0	0
284.3					1	0	0	0	0	0	0
285.0	0	0	0	0	0	0	0	0	0	0	0
285.1					16	0	0	0	0	0	0
285.2					10	2	0	0	0	0	0
285.4							4	0	0	0	0
286.0	0	0	0	0	0	0	0	0	0	0	0
286.1							3	0	0	16	2
286.5											
287.0	4	24	64	39	67	46	49	51	54	62	60
287.1		3		0	0	0	0	0	3	0	0
287.2							1	0	0	0	0

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
287.3								2	0	2	0
288.0	0	0	2	0	0	0	10	2	0	0	2
289.0	10	2	9	0	0	0	0	0	4	15	0
290.0	31	34	0	27	0	26	0	34	22	17	0
291.0	0	0	1	0	9	3	7	0	14	11	20
291.1					1	0	0	0	0	0	0
292.0	1	0	0	0	0	0	0	1	1	0	0
292.1								2	0	12	15
293.0	18	0	0	0	0	0	0	0	0	0	30
293.5								7	9	43	30
294.0	0	21	4	0	8	26	14	15	0	11	30
294.1					5	0	0	0	0	0	0
295.0	0	0	40	0	0	20	0	0	0	0	2
296.0	35	30	52	34	79	44	69	115	77	43	15
296.1							2	0	0	0	0
297.0	0	0	2	0	0	0	0	1	2	9	0
297.1		3		2	35	0	0	1	0	0	0
298.0	26	1	0	0	0	0	21	26	4	9	2
298.1		23		14	0	13	48	48	33	37	0
298.2						4	0	0	0	0	0
299.0	10	9	25	0	36	21	0	22	0	21	2
299.1					29	2	0	0	1	0	10
300.0	0	0	1	0	0	0	0	2	0	15	18
300.1							1	0	0	0	0
301.0	1	0	0	0	0	0	0	3	5	0	15
301.1							23	0	0	0	0
302.0	87	55	125	74	67	70	62	59	56	31	20
303.0	10	17	4	2	13	0	6	6	4	3	20
304.0	26	18	39	0	0	18	17	30	23	47	0
305.0	29	6	45	0	0	53	41	8	5	14	20
306.0	0	0	1	0	0	0	0	0	0	0	0
307.0	131	73	109	46	51	164	71	159	75	105	30
308.0	0	0	0	0	72	0	74	0	0	0	0
309.0	18	37	0	44	45	0	43	0	25	0	0
310.0	3	0	0	0	0	0	0	0	0	0	0
310.1						1	0	0	0	0	0
311.0	8	10	0	0	6	0	18	1	0	20	10
312.0	6	5	0	0	7	0	17	10	21	17	10
312.1					27	0	0	0	0	0	0
313.0	27	17	0	15	0	54	27	79	22	14	0
313.1							9	0	0	0	0
314.0	4	0	0	0	0	0	0	0	0	1	0
315.0	39	31	0	25	33	48	41	55	70	48	75
315.1						4	0	0	0	0	0
315.2								9	0	0	0
315.6										21	0
316.0	27	2	0	0	0	35	28	16	0	27	24

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
316.1		1		0	0	0	0	3	0	0	0
317.0	<u>13</u>	0	0	0	0	0	0	0	5	0	0
317.1						3	0	0	0	0	0
318.0	6	14	15	15	19	19	16	22	28	32	47
318.1							25	0	0	0	0
319.0	5	2	0	0	0	0	0	7	0	0	0
319.1						4	0	0	0	0	0
320.0	<u>42</u>	40	57	49	69	0	56	36	0	64	29
321.0	0	4	4	0	0	14	15	23	32	26	10
322.0	0	0	0	0	0	0	0	0	0	0	25
323.0	25	0	17	0	0	28	0	23	1	0	0
324.0	36	53	0	0	14	15	0	7	17	0	0
324.1					2	0	0	0	0	0	0
324.5									9	0	29
324.9											1
325.0	0	0	0	27	2	0	25	4	0	34	15
325.1							35	35	32	74	42
325.2								15	0	10	0
325.7										14	19
326.0	63	48	84	46	86	74	145	74	95	53	80
327.0	33	48	0	28	0	0	22	1	20	0	9
327.1						24	0	57	37	0	0
328.0	20	0	0	27	49	33	16	23	0	14	19
329.0	2	0	0	0	1	0	46	57	27	83	84
329.1							2	0	0	0	0
329.5									1	0	0
330.0	25	16	32	21	0	37	32	42	23	16	4
331.0	0	0	0	0	1	0	0	0	0	0	0
331.1								11	9	10	5
332.0	33	83	176	89	76	54	94	103	76	65	53
332.1								14	0	0	0
332.5							7	0	0	17	1
333.0	35	0	33	0	60	43	35	50	27	0	65
334.0	19	0	45	33	36	19	73	11	0	39	26
335.0	0	36	4	0	0	0	0	0	0	0	0
335.1						5	0	0	0	0	0
335.2								1	0	0	0
335.8										25	0
336.0	12	6	12	12	19	3	6	9	10	23	20
336.05								11	0	0	10
336.1		10		0	0	0	0	9	0	0	0
336.2						1	0	0	0	0	0
337.0	33	13	0	25	24	37	19	32	35	16	0
337.1		2		0	0	0	0	0	0	0	20
338.0	9	43	48	52	48	25	37	26	74	52	63
338.1						1	0	0	0	0	0
338.2								13	6	0	14

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
339.0	<u>28</u>	<u>11</u>	38	22	7	0	0	0	0	5	0
339.1						17	12	0	0	0	0
340.0	0	0	0	8	18	0	13	7	14	5	28
340.05							1	0	0	0	15
340.1					14	1	23	16	0	0	0
341.0	36	66	49	50	69	73	98	71	41	89	96
342.0	29	23	32	0	0	0	0	0	0	0	5
342.1				7	0	25	0	23	24	31	0
343.0	11	31	27	0	2	24	24	34	9	18	0
343.1						20	0	0	0	0	0
344.0	17	19	18	15	20	22	19	11	13	3	0
344.1							3	0	0	0	0
345.0	0	0	31	0	0	0	0	0	0	0	0
345.05							13	0	0	0	0
345.1							24	5	0	0	0
345.2								12	25	0	0
345.3								21	0	0	0
346.0	0	41	0	26	18	0	0	0	0	0	0
347.0	0	21	0	13	0	0	0	0	17	0	0
348.0	0	27	0	31	28	33	0	33	43	53	0
349.0	<u>44</u>	28	51	26	24	20	16	24	36	37	0
349.1						7	16	0	0	0	0
350.0	0	20	27	18	9	25	4	5	0	0	0
351.0	2	0	0	0	0	0	0	0	18	6	0
352.0	<u>85</u>	<u>123</u>	183	105	107	120	138	106	151	120	127
352.1		1		0	0	0	29	0	39	31	0
352.2						20	24	14	26	12	15
353.0	23	11	55	22	0	39	17	0	0	42	40
354.0	0	34	30	44	29	30	46	46	46	34	68
355.0	0	0	9	4	2	4	0	1	0	20	1
355.1						4	0	0	0	0	0
355.5										32	30
356.0	46	0	67	0	0	0	0	0	0	0	30
356.1					100	40	92	25	0	27	0
357.0	0	0	0	0	0	14	0	6	11	3	5
358.0	25	0	13	0	0	0	0	0	0	0	0
359.0	5	0	0	0	0	14	4	1	0	0	2
359.1						1	0	0	0	0	0
360.0	<u>58</u>	0	0	0	0	0	44	0	0	0	0
361.0	<u>97</u>	<u>186</u>	0	0	0	0	0	0	0	0	0
362.0	<u>21</u>	<u>78</u>	9	0	0	0	0	239	0	0	0
363.0	<u>354</u>	<u>279</u>	583	333	784	460	401	510	627	387	500
364.0	0	<u>12</u>	13	0	1	0	0	0	13	0	0
365.0	0	0	52	0	0	0	0	24	154	50	37
366.0	0	<u>240</u>	16	0	0	40	0	11	4	0	2
366.1				86	0	1	142	0	0	0	0
367.0	0	0	10	0	0	1	0	0	0	0	2

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
367.1							21	0	7	26	0
367.2								23	0	0	0
368.0	43	14	0	0	0	1	0	0	0	0	17
368.1						33	0	13	22	0	0
369.0	11	8	0	0	1	13	0	0	0	0	0
369.1						1	0	0	0	0	0
370.0	0	0	0	0	0	3	0	0	0	0	0
371.0	25	19	14	0	0	0	9	11	9	0	0
372.0	3	0	0	0	0	0	0	0	0	0	0
372.1								9	16	0	0
373.0	<u>101</u>	<u>104</u>	172	117	138	159	133	206	146	0	125
373.1		34		0	0	26	0	0	26	0	7
374.0	<u>29</u>	0	76	0	0	32	23	0	43	0	0
375.0	<u>10</u>	0	1	4	0	0	0	0	0	0	0
376.0	1	0	0	0	0	0	4	0	0	0	0
377.0	4	0	0	0	0	0	0	0	0	0	0
378.0	5	1	0	0	0	2	0	0	0	0	0
378.1		2		0	0	0	0	0	0	0	0
379.0	1	2	0	0	3	0	0	4	0	0	0
380.0	15	0	0	0	0	0	0	0	0	0	0
380.1						4	0	0	0	0	0
380.2							2	0	0	0	0
381.0	32	39	46	46	16	42	0	55	73	0	0
381.1		<u>282</u>		0	410	441	0	0	0	0	0
381.2					81	0	0	0	0	0	0
381.3						15	0	0	0	0	0
382.0	<u>325</u>	<u>192</u>	483	423	0	0	354	452	1060	533	513
383.0	0	<u>492</u>	0	457	464	426	281	830	316	305	576
384.0	<u>518</u>	1	269	7	12	5	15	14	22	20	39
384.1											66
385.0	<u>146</u>	<u>117</u>	131	96	55	148	76	144	88	93	120
386.0	0	0	0	0	9	0	0	0	0	0	11
386.1						1	0	0	0	0	0
387.0	0	0	0	0	0	0	0	0	0	0	25
388.0	0	0	0	0	0	0	0	0	0	20	22
389.0	0	0	0	0	0	0	0	0	0	17	9
390.0	0	0	21	48	57	24	55	14	35	18	10
390.1						14	0	0	0	0	0
391.0	0	0	0	0	0	0	0	0	0	8	0
392.0	0	0	0	0	0	0	10	13	0	17	0
393.0	20	0	0	21	0	40	22	0	18	1	2
394.0	0	22	0	0	0	7	3	0	0	29	13
395.0	0	10	0	32	21	23	20	36	36	42	34
395.1							1	0	0	0	0
396.0	0	0	0	0	4	11	8	4	0	0	2
396.1						16	0	0	0	0	0
397.0	0	0	2	12	8	7	9	0	0	0	10

YEAR SITE	82R	83R	82	83	84	85	86	87	88	89	90
398.1							0	0	0	0	0
398.0	0	2	0	0	0	43	6	0	0	0	0
399.0	10	9	15	46	49	67	24	0	0	55	0
399.1										25	0
400.0	0	58	0	0	0	0	53	38	0	0	41
401.0	0	0	0	0	3	6	1	0	0	0	0
402.0	0	0	0	0	0	0	0	2	0	0	0
403.0	0	0	0	0	0	3	0	0	0	0	0
404.0	0	0	0	79	28	13	3	14	0	0	0
405.0	<u>56</u>	8	0	7	9	14	13	0	0	15	0
405.05									3	0	0
405.1							1	0	0	0	0
406.0	0	0	0	0	0	0	0	0	0	0	0
407.0	0	0	0	0	0	0	0	0	0	0	0
407.1							13	9	0	5	0
408.0	0	0	0	0	0	0	1	0	0	0	3
409.0	0	0	0	0	0	20	61	209	42	0	0
410.0	0	0	48	0	10	28	30	0	0	0	0
411.0	0	0	0	0	0	0	0	0	0	0	0
412.0	0	0	35	0	0	0	6	0	0	0	0
413.0	66	24	52	33	5	96	72	0	48	0	0
413.1		1		0	0	0	0	0	0	0	0
414.0	<u>263</u>	<u>215</u>	0	363	328	379	516	386	186	440	424
415.0	63	0	0	0	0	0	2	5	33	8	0
416.0	0	0	0	0	0	8	0	0	0	0	0
417.0	0	0	0	0	0	0	1	0	0	0	0
418.0	<u>208</u>	<u>109</u>	129	542	139	328	266	278	176	304	210
419.0	0		0	0	0	1	0	0	0	0	0
420.0	0		0	0	9	10	23	0	0	37	0
421.0	0	0	0	0	0	0	0	0	0	0	0
422.0	51	69	50	56	41	32	42	25	40	42	58

APPENDIX III. Harbor seal mainland hauling sites with site descriptions as available. (SITE= site number; LOCATION= name of site; COUNTY= county of site; LAT/LONG= exact location of site; SUBST= primary type of substrate [1= extended reef, 2= offshore rock, 3= onshore rock, 4= harbor or estuary, 5= ocean sandy beach, 6= river log, 7= floats, 8= night haul out, 9= ocean rocky beach]; MAX= maximum number counted at site; ?= some question as to location; blanks indicate data not available).

SITE	LOCATION	COUNTY	LAT	LONG	SUBSTRATE	MAX
000.1	N. Pt. Loma	SD	32 .	117 .	2	7
001.0	1.2km S. Pt. La Jolla	SD	3250.56	11716.90	1	0
002.0	.6km S.Pt.LaJolla-Childrens Cv	SD	3250.87	11716.68	1	10
003.0	0.5km S. Pt. La Jolla	SD	3250.90	11716.62	2	37
004.0	Mugu Lagoon	V	3406.11	11904.17	4	139
005.0	.1km E.Std. Oil P. Carpinteria	SB	3423.11	11930.33	5 1	116
006.0	.3km W.Std. Oil P. Carpinteria	SB	3423.13	11930.47	2	70
007.0	Carpinteria St. Beach	SB	3423.36	11931.09	1	53
008.0	Sand Pt.	SB	3423.60	11932.30	2	11
009.0	Moore Mesa 2km E. Goleta River	SB	3425.34	11947.82	2	70
010.0	1.2km W. Ellwood Oil Pier	SB	3426.38	11956.24	5	205
010.1	N. Ellwood	SB	3427.38	12028.03	2	1
010.8	Gov't Pt.	SB	3427.	12028.	1	3
011.0	0.8km E. Pt. Conception	SB	3426.53	12027.50	5	554
011.1	Lighthouse/Big Cove	SB	3426.08	12027.76	5	213
012.0	N.Pt. Conception/Off Sewer Hse	SB	3427.36	12028.01	2	38
013.0	N. Pt. Conception	SB	3429.	12028.	1	19
013.1	1km S. Sudden/2km N. Jalama	SB	3431.70	12034.79	2	15
014.0	N. of Sudden 3km	SB	3432.	12034.	3	13
014.1	N of Sudden/S of Rocky Pt.	SB	3433.34	12036.37	5	263
014.2	S of Rocky Point	SB	3433.42	12037.32	1	122
014.4	1.2km S. Rocky Pt.	SB	3433.47	12037.30	5	314
014.8	0.75km S. Rocky Pt.	SB	3433.50	12037.49	5	98
015.0	1.0 Km S. Rocky Pt.	SB	3433.52	12037.59	3 1	247
015.1	0.5 km S. of Rocky Pt.	SB	3433.68	12037.59	3	228
015.2	0.3km S Rocky Pt.	SB	3433.	12037.	1	119
016.0	1.0 Km S. Rocky Pt.	SB	3433.81	12037.72	3 5	239
017.0	S. Pt. Arguello	SB	3434.	12038.	1	57
017.1	S. Pt Arguello	SB	34	120	3	18
018.0	S. Purisima Pt./Lompoc Landing	SB	3444.	12037.	3	127
019.0	S. Purisima Pt.	SB	3444.63	12037.24	1	100
019.1	S. Purisima Pt.	SB	3444.77	12037.64	2	69
019.2	S. Purisima Pt.	SB	3445.13	12037.67	2	13

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
020.0	Purissima Pt.	SB	3445.35	12038.20	1	43
021.0	Pt. Sal Area/Lions Head	SB	3452.05	12036.82	3	19
021.1	Pt. Sal Area	SB	3554.	12040.	3	10
021.2	Pt. Sal Area	SB	3554.	12040.	3	26
021.3	Pt. Sal Area/State Park	SB	3554.	120	1	2
021.5	Pt. Sal Area/Lion Rock	SB	3554.19	12039.85	1	8
022.0	N. Side of Pt. Sal	SB	3554.31	12040.01	3	68
023.0	Mussel Pt.	SB	3455.76	12040.04	1	13
023.1	1 km N. Pismo Beach Pier	SLO	3508.90	12038.90	3 2	34
024.0	1.7km N. Pismo Beach P.	SLO	3509.10	12039.83	2	58
025.0	Shell Beach/South Pt.	SLO	3509.14	12039.86	2	138
026.0	0.1km N. #25/Rock at lite	SLO	3509.15	12040.	1	51
026.1	E. Mallagh Landing	SLO	3110.	12042.	1	22
027.0	Pirates Cove (Mallagh Landing)	SLO	3511.07	12042.86	2	29
028.0	Fossil Pt.	SLO	3510.61	12042.45	2	20
028.1	Rattlesnake Canyon	SLO	3510.	120	3	20
029.0	0.8km S. Pecho Rock	SLO	3510.	12049.	1	2
030.0	Pecho Rock	SLO	3510.75	12048.95	2	2
031.0	Deer Canyon (Outside S)	SLO	3511.32	12048.37	1	67
031.1	Vic. Deer Canyon	SLO	3510.74	12046.06	1	45
032.0	Deer Canyon (Inside Cove)	SLO	3511.29	12048.74	1	4
032.1	Red Tail Reef	SLO	3511.	1204	1	93
033.0	0.9km N. Deer Canyon	SLO	3511.15	12047.97	1	22
033.1	0.95km N. Deer Canyon	SLO	3511.55	12049.27	3	16
033.2	N. Deer Canyon	SLO	3511.41	12049.89	1	98
034.0	1.0km N. Deer Canyon	SLO	3511.56	12049.28	3	38
034.1	.1km N. Deer Canyon	SLO	3511.	12049.	2	38
035.0	1.2km N. Deer Canyon	SLO	3511.58	12049.26	2	67
035.1	1.3km N. Deer Canyon	SLO	3511.68	12049.50	1	3
036.0	1.5km N. Deer Canyon	SLO	3511.73	12049.60	1	42
036.1	Wash Rocks N of Site 36 Rock	SLO	3511.	12049.	3	2
037.0	2.0km N. Deer Canyon	SLO	3511.81	12049.87	1	80
038.0	2.1km N. Deer Canyon	SLO	3511.80	12049.99	1	68
039.0	2.4km N. D.C.--Green Peak Cove	SLO	3511.90	12050.11	1 3	199
039.05	N of China Shack	SLO	3512.01	12050.37	1	42
039.1	N. China Shack	SLO	3512.09	12050.42	1	129
039.2	S. of Lion Rock	SLO	3512.	1205	2	8
040.0	0.4km S. Diablo Cyn Har.	SLO	3512.	12052.	2	126
040.1	N. Diablo Nuclear Fac.	SLO	3512.	12052.	2	1
041.0	0.6km N. Lion Rock	SLO	3513.44	12052.56	2	78
041.05	N. Lion Rock	SLO	3513.	12052.		24
041.1	N. Lion Rock--Barn Road	SLO	3513.	12052.34	5	116
041.2	N. Lion Rock	SLO	3513.81	12052.48	1	73

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
042.0	1.8km N. Lion Rock (opp.Res.)	SLO	3513.94	12052.66	1	58
042.1	N. Lion Rock	SLO	3514.28	12053.05	3	61
043.0	2.3km N. Lion Rock	SLO	3514.15	12053.04	2	21
043.1	1.0km N. Pt. Buchon	SLO	3515.00	12053.58	5	13
044.0	0.8km S. Islay Creek	SLO	3516.	12053.	2	24
045.0	0.5km S. Hazard Cyn.	SLO	3517.34	12053.82	1	22
046.0	Morro Bay (Inside Harbor)	SLO	3520.39	12050.59	4	41
046.1	N. Whale Rock	SLO	3520.30	12051.10	2	1
047.0	0.2km W. Cayucos Pier	SLO	3526.91	12054.44	2	13
048.0	1.0km W. Cayucos Pier	SLO	3526.84	12054.59	1	22
049.0	1.3km W. Cayucos Pier	SLO	3526.87	12055.25	1	95
050.0	0.1km W. Black Rock	SLO	3526.87	12055.50	1	86
051.0	0.9km E. Cayucos Pt.	SLO	3526.81	12055.80	1	62
052.0	0.2km E. Cayucos Pt.	SLO	3526.79	12056.22	1	126
053.0	Cayucos Pt.	SLO	3526.76	12056.37	1	197
054.0	0.2km W. Cayucos Pt.	SLO	3526.77	12056.47	1	96
055.0	0.4km W. Cayucos Pt.	SLO	3526.76	12056.66	1	130
055.1	W. Cayucos Pt.	SLO	3526.73	12056.36	1	75
055.2	S. of Cayucos Point	SLO	3526.76	12056.22	1	20
055.3	S. of Cayucos Point	SLO	3526.	12056.	2	1
055.4	S. of Cayucos Point	SLO	3526.	12056.	2	9
055.5	S. of Cayucos Point	SLO	3526.80	12056.40	2	16
056.0	2.1km NW Cayucos Pt.	SLO	3527.76	12057.66	1	50
056.1	NW Cayucos Pt.	SLO	3527.	12057.	1	39
056.2	NW Cayucos Pt.	SLO	3526.92	12056.76		33
057.0	Villa Creek	SLO	3527.	12058.	1	46
057.1	Between Villa Cr. & China Harb	SLO	3527.	12100.	1	30
057.2	China Harbor	SLO	3527.	12100.	3	14
058.0	Point Estero	SLO	3527.	12100.	1	67
058.1	N of Pt. Estero area	SLO	3527.	12100.	1	51
058.5	S of China Shack	SLO	3528.40	12100.60	1	18
058.7	S of China Shack	SLO	3528.67	12100.89	1	21
058.9	S of China Shack	SLO	3528.67	12100.89	1	43
059.0	0.4km S. China Shack	SLO	3529.00	12101.03	1	23
060.0	0.3km S. China Shack	SLO	3528.87	12101.39	1	11
061.0	0.1km S. China Shack	SLO	3529.21	12101.56	2	25
061.8	China Shack	SLO	352 .	12101.	3	7
062.0	0.1km N. China Shack	SLO	3529.06	12101.44	1	17
063.0	0.4km N. China Shack	SLO	3529.06	12101.58	1	19
064.0	0.5km N. China Shack	SLO	3529.08	12101.65	1	27
064.5	0.6 km N. China Shack	SLO	35 .	121 .	2	2
065.0	0.7km N. China Shack	SLO	3529.18	12101.71	1	43
065.1	N China Shack	SLO	3529.	12103	1	1

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
065.2	N. China Shack	SLO	3529.42	12101.66	2	61
066.0	1.9km S. Radar Station	SLO	3530.33	12103.05	1	51
066.1	S. Radar Station	SLO	3530.50	12103.00	3 1	45
066.2	Thompson	SLO	3530.	12103.	3	1
067.0	Off Cambria Air Force Station	SLO	3530.89	12103.82	2	65
068.0	Dawson	SLO	3531.	12104.	1	15
068.1	Inshore of White Rock	SLO	3531.83	12104.65	1	19
068.15	Vicinity White Rock	SLO	3531.	12104.	1	21
068.2	N. of White Rock	SLO	3531.	12104.	1	42
068.25	Inshore of Von Helm Rock	SLO	3531.	12104.	1	43
068.3	S of White Pt/off Widsor Blvd	SLO	3531.	12104.	2	1
069.0	Castle Inn,inshor Cambria Rock	SLO	3534.67	12106.80	2	15
069.1	Leffingwell Creek	SLO	3535.67	12106.80	2	15
070.0	The Oaks & Pico Rock	SLO	3536.05	12107.86	1	28
070.1	The Oaks	SLO	3536.11	12108.58	1	15
071.0	The Oaks	SLO	3536.14	12108.07	1	104
071.1	N. the Oaks	SLO	3536.18	12108.11	2	2
072.0	1.6km N. San Simeon Cr.	SLO	3536.22	12108.43	1	68
073.0	1.8km N. San Simeon Cr.	SLO	3536.29	12108.58	1	13
073.1	Pico Creek Cove	SLO	3537.04	12109.01	2	22
074.0	.6km E. San Simeon Pier	SLO	3538.47	12110.80	2	68
074.1	W San Simeon Pt	SLO	3538.39	12110.75	1	2
075.0	1.3km W. San Simeon Pt.	SLO	3538.40	12111.71	1	69
075.1	W Adobe Creek	SLO	3539.11	12113.22	1	2
076.0	.4km W. Adobe Creek	SLO	3539.15	12113.22	1	102
076.1	.8km W. Adobe Creek	SLO	3539.20	12113.79	2	40
077.0	Hydrographic Station	SLO	3539.30	12114.29	1	33
077.1	1.8km W. Adobe Creek	SLO	3539.15	12114.45	1	23
078.0	1.9km W. Adobe Creek	SLO	3539.24	12114.19	2	104
079.0	Cove N of Hydrographic Statn	SLO	3539.65	12114.91	1	73
079.1	E. Piedras Blancas Lthouse	SLO	3539.	12115.	2	4
080.0	2.7km E Piedra Blancas Lthouse	SLO	3539.57	12115.23	1	33
080.1	E. Piedras Blancas	SLO	3539.94	12116.81	1	18
081.0	2.3km E Piedra Blancas Lthouse	SLO	3539.75	12115.48	2	18
081.1	E. Piedras Blancas	SLO	3539.	12115.	1	8
081.2	E. Piedras Blancas	SLO	3539.	12115.	1	20
081.3	Pt. Piedras Blancas-Southside	SLO	3539.94	12116.81	1	26
082.0	Offshore Pt. Piedras Blancas	SLO	3539.76	12116.62	2	70
083.0	Beach at Pt. Piedras Blancas	SLO	3539.86	12116.56	1	58
084.0	Harleck Castle Rock Area	SLO	3542.56	12112.40	1	14
085.0	La Cruz Rock	SLO	3542.34	12118.27	2	122
086.0	0.3km S. Pt. Sierra Nevada	SLO	3542.68	12118.82	2	68
086.8	2 km S. Breaker Pt.	SLO	3543.90	12118.60	1	1

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
087.0	0.9km S. Breaker Pt.	SLO	3544.28	12118.72	2	175
087.1	N. Breaker Pt.	SLO	3544.15	12119.07	1	1
088.0	N. Ragged Pt.	SLO	3546.	12119.	1	5
089.0	N. Ragged Pt.	SLO	3547.	12120.	2	20
090.0	1.0km S. Salmon Creek	M	3548.	12121.	2	15
091.0	1.6km S. Salmon Creek	M	3548.30	12121.28	1	13
091.1	Salmon Creek area	M	3548.	12121.	2	21
092.0	0.3km S. Salmon Creek	M	3548.36	12121.59	2	12
093.0	0.5km N. Salmon Creek	M	3548.58	12121.86	2	6
093.1	S. Redwood Gulch	M	3549.08	12122.77	2	18
093.3	2.5 mi. S. Redwood Gulch	M	3549.84	12123.39	2	1
094.0	Redwood Gulch	M	3550.02	12123.74	2	2
094.1	N of Redwood Gulch	M	3550.	12123.	2	10
094.2	Vicinity Redwood Gulch	M	3550.10	12123.60	2	5
094.3	SE Alder Creek	M	3551.	12124.	2	1
094.4	S of Alder Creek	M	3551.	12124.	2	6
094.5	S of Alder Creek	M	3551.	12124	2	1
095.0	0.3km S. Alder Creek	M	3551.37	12124.86	2	15
096.0	0.8km N. Alder Creek	M	3551.49	12125.01	2	19
096.1	N. Alder Creek	M	3551.70	12125.70	2	14
096.2	N. Alder Creek	M	3551.	12125.	2	2
096.3	N. Alder Creek	M	3551.	12125.	2	1
096.4	N. Alder Creek	M	3551.	12125.	2	3
097.0	S Mud Creek Bridge	M	3551.75	12125.88	2	23
097.5	N Mud Creek	M	3551.	12125.	2	26
098.0	Bird Rock (Gorda Rock)	M	3552.38	12127.04	2	59
099.0	0.6km S. Cape San Martin	M	3553.08	12127.59	5	5
099.1	Vicinity Cape San Martin	M	3552.75	12121.06	2	7
099.2	Vicinity Cape San Martin	M	3552.84	12127.25	2	6
099.3	N of White Bridge	M	3552.	12127.	2	2
099.5	N of White Bridge	M	3553.89	12027.91	2	3
100.0	1.5km S. Plaskett Rock	M	3554.59	12128.04	2	9
101.0	S Gorda	M	3555.69	12128.29	2	29
102.0	Gorda	M	3555.69	12128.29	2	44
102.1	Prewitt Creek	M	3556.	12128.	2	2
103.0	N Prewit Creek	M	3556.47	12128.64	2	1
103.8	S. Wild Cattle Creek	M	3557.	12129.	2	9
104.0	0.1km S. Wild Cattle Cr.	M	3557.43	12129.02	2	11
104.1	S Wild Cattle Cr	M	3557.	12129.	2	3
104.2	E of Wild Cattle Cir	M	3558.	12130	2	1
104.3	N of Wild Cattle Cr	M	3559.	1213	2	1
104.5	1.5 mi S. Rockland Landing	M	3600.30	12130.84	3	11
104.8	Off Lucia?	M	3620.	12130.	2	4

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
105.0	1.0km E. Lopez Point	M	3600.87	12132.88	2	7
105.1	E of Lopez Point	M	3600.	12132.	2	5
106.0	0.1km E. Lopez Point	M	3601.15	12133.96	2	1
106.1	S Lopez Point	M	3601.	1213 .	2	1
107.0	0.1km W. Lopez Point	M	3601.19	12134.03	1	34
107.1	W Lopez Point	M	3601.	12134.	2	5
108.0	0.7km S. Vicente Creek	M	3602.30	12134.84	2	15
109.0	Vicente Creek	M	3602.68	12135.10	2	10
109.5	N Gamboa Point	M	3602.	12135.	2	1
109.6	N Gamboa Point	M	3602.	12135.	2	3
109.8	N Gamboa Point	M	3602.	12135.	2	3
110.0	.6km N. Big Creek/Sq Blk Rock	M	3604.35	12136.35	5 9	208
111.0	1.0km S. Dolan Rock	M	3604.66	12136.62	2	98
112.0	0.6km S. Dolan Rock	M	3604.75	12136.87	2	43
113.0	Dolan Rock	M	3605.	12137.	2	37
114.0	0.2km N. Rat Creek	M	3605.61	12137.23	2	71
114.1	Rat Creek Area	M	3605.	12137.	2	3
114.2	N. Rat Creek	M	3605.	12137.	3	8
114.3	N Rat Creek	M	3605.	12137.	2	3
114.4	S of Lime Creek	M	3605.	12137.	2	9
114.5	Lime Creek	M	3606.	12138.	2	6
115.0	0.3km S. Lime Creek	M	3607.10	12137.94	2	46
116.0	0.4km S. Anderson Canyon	M	3608.72	12139.87	2	6
117.0	N. Anderson Canyon	M	3609.	12140.	2	29
118.0	0.1km S. McWay Rocks	M	3609.80	12140.62	2	13
118.1	S. McWay Rocks	M	3609.	12140.	2	4
118.5	S of Seaview Shoals	M	3529.68	12040.87	2	3
119.0	McWay Rocks	M	3609.80	12140.67	2	9
119.1	Vicinity Mcway Rks.	M	3609.	12140.	1	12
120.0	0.3km N. McWay Rocks	M	3609.95	12140.77	2	2
121.0	1.2km S. Partington	M	3609.91	12141.20	2	3
122.0	0.6km S. Partington Creek	M	3610.11	12141.56	2	18
123.0	0.8km S. Torre Canyon	M	3611.24	12142.46	2	4
124.0	La Fler Canyon	M	3611.98	12143.70	2	1
125.0	0.1km N. La Fler Canyon	M	3611.82	12143.64	2	13
126.0	0.8km N. La Fler Canyon	M	3612.	12144.	3	11
126.4	S Grimes Point	M	3612.	12144.	2	7
126.5	Grimes Point	M	3612.16	12144.41	2	13
127.0	2.7km S. Pfeiffer Point	M	3613.28	12146.55	1 5	118
128.0	Cooper Point	M	3614.	12150.	2	1
129.0	2.4km N. Cooper Point	M	3615.75	12150.72	2	54
130.0	1.7km N. Big Sur River	M	3617.15	12152.56	1	266
130.1	Pt. Sur Lighthouse	M	3617.41	12153.78	1	30

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
131.0	1.6km S. Pt. Sur Lthouse	M	3617.96	12153.24	2	71
131.1	1.0km S. Pt. Sur Lthouse	M	3617.	12153.	1	56
131.2	1.0km S. Pt. Sur Lthouse	M	3617.	12153.	2	21
131.3	S. Pt. Sur Lighthouse	M	3617.	12153.	2	64
132.0	1.2km S. Pt. Big Sur Lthouse	M	3618.11	12153.51	1	107
132.1	S. Big Sur Lighthouse	M	3618.	12153.	1	8
133.0	1.1km S. Pt. Big Sur Lthouse	M	3618.17	12153.35	2	159
134.0	S. Hurricane Pt.	M	3621.10	12154.09	1	12
134.1	S Hurricane Pt.	M	3621.	12154.	2	4
134.2	S Hurricane Pt.	M	3621.	12154.47	2	10
134.5	S of Hurricane Point	M	3621.	12154.	3	23
135.0	Castle Rk. (Bixby Ldg.)	M	3622.44	12154.35	5	38
136.0	0.5km N. Palo Colorado Canyon	M	3624.14	12154.70	2	14
137.0	0.8km S. Soberanes Point	M	3626.59	12155.43	2	5
137.1	Soberanes Pt.	M	3626.	121	1	2
138.0	Inshore of Lobos Rocks	M	3626.59	12155.43	2	26
138.1	N of Lobos Rocks	M	3627.	12155.	2	30
139.0	0.9km S. Malpasos Creek	M	3628.37	12156.25	2	14
139.1	S. Malpasos Creek	M	3628.66	12156.32	3	14
140.0	Yankee Point Cove	M	3629.29	12156.62	2	19
140.1	Yankee Point	M	3628.66	12156.32	1	1
141.0	Yankee Point	M	3628.66	12156.32	3	78
141.1	Yankee Point	M	3629.	12156.	3	24
142.0	Bird Island (Pelican Point)	M	3630.56	12156.51	2	31
143.0	0.3km N. Bird Island	M	3630.40	12156.63	2	8
143.5	Devil's Cauldron	M	3631.08	12156.92	2	2
144.0	Headland Cove	M	3631.21	12156.97	3	28
144.5	Granite Point	M	3631.	12156.	3	10
145.0	Whalers Cove	M	3631.20	12156.14	2	35
146.0	The Pit, Whalers Cove	M	3631.42	12156.02	2	72
147.0	Moss Cove (Pt. Lobos Reserve)	M	3631.35	12156.04	2	103
148.0	Arrowhead Point (Outside)	M	3632.48	12155.94	1	70
149.0	Arrowhead Point (Inside)	M	3631.34	12156.74	1	94
150.0	Pescadero Rocks	M	3633.70	12156.62	1	97
151.0	.5kmN.Pescadero Pt.-Stwtr.Cove	M	3633.92	12156.97	2	80
152.0	Cypress Pt. Parking Lot South	M	3634.58	12158.36	2	85
153.0	0.1km S. Cypress Point	M	3634.75	12158.60	2	93
154.0	Cypress Point	M	3634.82	12158.62	1	68
154.1	Cypress Point	M	3634.	12158.	3	2
155.0	0.1km N. Cypress Point	M	3634.83	12158.52	1	72
155.1	?km N Cypress Point	M	3635.00	12157.44	2	102
156.0	0.4km N. Cypress Point	M	3634.92	12158.60	2	61
156.1	Near Fan Shell Beach	M	3635.	12157.	1	54

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
157.0	Seal Rock	M	3635.30	12157.90	2	175
157.1	N of Seal Rock	M	3635.57	12158.20	2	1
158.0	1.3km N. Seal Rock (Ocean Av.)	M	3635.97	12157.76	1	18
159.0	0.2km S. Point Joe	M	3637.55	12156.44	1	9
160.0	Asilomar (Arena Av.)	M	3637.60	12156.47	1	45
160.05	S Asilomar Arena Av	M	3637.60	12156.47	2	3
160.1	Asilomar (Arena Ave)	M	3637.89	12155.28	1	9
161.0	.5km W Lovers Pt.(Pacific Av.)	M	3637.70	12155.17	2	55
161.1	SE Lovers Pt.	M	3637.69	12155.18	2	32
161.2	SE Lovers Pt.	M	3637.50	12154.89	2	6
162.0	Hopkins Marine Station	M	3637.28	12154.14	1	149
162.1	Cannery Row Rock	M	3637.	12154.	2	14
162.2	Aquarium	M	3637.	12154.	2	9
163.0	Monterey Harbor (2km S Brwtr.)	M	3636.42	12153.60	2	19
164.0	Elkhorn Slough(1.6km E. Hwy 1)	M	3648.92	12146.11	4	149
164.7	Cement Ship N. Rio Del Mar	M	3657.80	12154.80	2	41
165.0	Soquel Pt.	SC	3657.20	12158.60	2	89
166.0	2.0km N. Terrance Pt.	SC	3657.04	12205.30	3	190
167.0	Table Rock	SC	3657.80	12208.10	1 5	169
167.8	N. Yellow Bank Creek	SC	3639.30	12210.50	2	1
168.0	1.2km N. Yellow Bank Creek	SC	3659.	12210.	2	29
169.0	Davenport Cement Plant.5km N.P	SC	3700.52	12212.26	3	40
170.0	El Jarro Pt.	SC	3701.50	12213.70	1	1
170.1	N El Jarro Pt.	SC	3701.24	12213.35	3	1
171.0	N. Scott Creek	SC	3703.30	12214.21	1	78
172.0	2.6km S. Greyhound Rock	SC	3703.35	12215.21	5	145
173.0	1.7km S. Greyhound Rock	SC	3703.93	12215.27	1	53
174.0	1.3km S. Greyhound Rock	SC	3704.04	12215.42	3	139
175.0	1.0km N. Greyhound Rock	SC	3704.97	12216.42	2	81
175.5	N Greyhound Rock	SC	37	122	1	1
176.0	Ano Nuevo Pt.	SM	3706.58	12219.75	1	31
177.0	Ano Nuevo Isl.	SM	3706.55	12220.58	2 3	124
178.0	0.7km N. Ano Nuevo Pt.	SM	3706.98	12220.12	1	116
179.0	1.1km N. Ano Nuevo Pt.	SM	3707.11	12220.29	1	59
180.0	1.3km N. Ano Nuevo Pt.	SM	3707.18	12220.58	2	44
181.0	1.8km S. Franklin Pt.	SM	3708.30	12220.85	2	17
182.0	Franklin Pt.	SM	3708.93	12221.77	2	26
182.1	Vicinity Franklin Pt.	SM	3708.	12221.	1	3
182.2	N. Vicinity Franklin Pt.	SM	3709.93	12221.77	2	4
182.7	N. Franklin Pt.	SM	3710.20	12222.00	1	1
183.0	3.4km N. Franklin Pt.	SM	3710.66	12222.45	1	4
184.0	1.4km S. Pigeon Pt.	SM	3710.71	12223.16	2	2
185.0	0.4km S. Pigeon Pt.	SM	3710.93	12223.31	2	43

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
186.0	1.4km N. Pigeon Pt.	SM	3711.60	12224.01	1	12
186.1	N. Pigeon Pt.	SM	3711.	12224.	2	1
187.0	1.7km N. Pigeon Pt.	SM	3711.67	12224.16	2	8
187.7	.75 mile N Bolsa Point	SM	3711.71	12224.30	2	1
188.0	N. Bolsa Pt	SM	3712.71	12224.43	1	185
189.0	0.5km N. Bean Hollow	SM	3713.81	12224.83	2	11
190.0	0.8km N. Bean Hollow	SM	3713.96	12224.91	1	105
191.0	1.0km N. Bean Hollow	SM	3714.11	12225.00	2	73
191.1	Pescadero Pt.	SM	3714.47	12225.14	1	6
192.0	0.2km N. Pescadero Pt.	SM	3714.74	12225.16	2	34
193.0	0.3km N. Pescadero Pt.	SM	3714.87	12225.13	2	24
193.1	N Pescadero Pt.	SM	3714.	12225.	1	5
194.0	Butano Creek Mouth	SM	3716.02	12224.82	2	54
194.1	N. Martins Beach	SM	3716.02	12224.	2	1
195.0	Eel Rock	SM	3724.48	12225.66	2	144
195.1	N. Eel Rock	SM	3724.80	12225.90	1	146
196.0	Miramontes Pt.	SM	3726.48	12226.66	2	47
196.1	6km N. Miramontes Pt.	SM	3726.95	12226.	2	33
197.0	Sail Rock, Pillar Pt.	SM	3729.49	12229.98	2	122
197.1	Sail Rock, Pillar Pt.	SM	3730.16	12230.15	1	100
198.0	1.0km N. Pillar Pt.	SM	3730.21	12230.22	2	135
198.1	N. Pillar Pt.	SM	3730.	12230.	2	25
199.0	1.5km N. Pillar Pt.	SM	3730.27	12230.27	1	131
199.5	0.5 mi S. Seal Cove	SM	3730.	12230.	2	24
200.0	Moss Beach (Seal Cove)	SM	3730.54	12230.83	1	58
200.1	S. Seal Cove	SM	3730.	12230.	2	24
201.0	Moss Beach (N. Seal Cove)	SM	3730.99	12230.94	2	68
201.1	S. Pt. San Pedro	SM	3735.	12231.	2	3
202.0	San Pedro Rock (South Side)	SM	3735.69	12231.22	3	121
202.1	Mussel Rock	SM	3739.00	12230.00	2	1
203.0	Gaudalupe Slough	SCL	3726.70	12202.14	4	67
204.0	Calaveras Pt.	ALA	3728.02	12202.99	4	98
205.0	Mowry Slough	ALA	3729.32	12201.98	4	328
206.0	Plummer Creek	ALA	3730.48	12205.2	4	53
207.0	Greco Island	SM	3731.05	12210.78	4	74
208.0	Corkscrew Slough	SM	3738.79	12212.88	4	17
209.0	Yerba Buena Island	SF	3748.43	12221.71	2	65
210.0	0.4km W. Blunt Pt., Angel Isl.	MAR	3806.98	12226.69	2	18
210.8	Lighthouse Blunt Pt Rock	SF	3751.39	12025.16	2	13
211.0	Sausalito Small Craft Harbor	MAR	3752.30	12229.69	7	30
212.0	Strawberry Spit	MAR	3753.27	12229.89	1	97
212.5	3 km. N. California Point	MAR	3755.94	12230.02	5	8
213.0	Castro Rocks	CC	3756.00	12224.99	2	123

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
214.0	Tubbs Island	SON	3806.98	12226.69	4	34
215.0	Pt. Bonito (.6km N. on inside)	MAR	3749.29	12231.47	2	67
215.1	Pt. Bonita	MAR	3749.33	12231.	2	1
216.0	0.4km N. Tennessee Cove	MAR	3750.63	12233.30	2	5
216.1	Muir Beach	MAR	375 .	1223 .		1
217.0	Bolinas Lagoon	MAR	3754.82	12240.2	4	182
217.1	Bolinas Lagoon	MAR	3753.24	12241.81	5	65
218.0	Duxbury Reef	MAR	3753.29	12241.88	1	193
218.1	West end Duxberry Reef	MAR	3753.	12241.	1	24
219.0	Bolinas Pt.	MAR	3754.03	12243.51	1	25
219.1	Vicinity Bolinas Pt.	MAR	3754.74	12243.75	1	1
219.2	Vicinity Bolinas Pt.	MAR	3754.	12243.	1	1
219.3	Vicinity Bolinas Pt.	MAR	3754	12243.	1	4
220.0	Rocks at S. Edge Double Pt.	MAR	3756.58	12246.54	1	93
221.0	Double Pt. Beach	MAR	3756.50	12246.61	5	831
222.0	Beach .4km N. Double Pt.	MAR	3756.90	12247.69	5	11
223.0	Millers Pt.	MAR	3759.08	12248.64	2	3
224.0	Limantour Spit	MAR	3801.89	12255.34	4	509
225.0	Drakes Estero	MAR	3802.00	12255.78	4	649
226.0	1.7km W. Chimney Rock	MAR	3759.51	12258.83	2	66
226.1	W. Chimney Rock	MAR	3759.	12258.	5	35
226.2	W. Chimney Rock	MAR	3759.	12258.	2	72
226.3	W. Chimney Rock	MAR	3759.	12258.	2	12
227.0	1.8km W. Chimney Rock	MAR	3759.55	12259.03	2	34
228.0	1.9km W. Chimney Rock	MAR	3759.52	12259.28	2	29
229.0	2.1km W. Chimney Rock	MAR	3759.57	12259.17	2	6
230.0	2.5km W. Chimney Rock	MAR	3759.52	12259.62	2	124
231.0	2.7km W. Chimney Rock	MAR	3759.51	12259.79	5	245
232.0	3.6km W. Chimney Rock	MAR	3759.50	12300.02	5	90
232.1	W. Chimney Rock	MAR	3759.50	12300.02	5	28
232.2	W. Chimney Rock	MAR	3759.03	12300.03	5	70
232.3	W. Chimney Rock	MAR	3759.55	12300.03	5	17
233.0	3.7km W. Chimney Rock	MAR	3759.57	12300.51	1	31
234.0	4.2km W. Chimney Rock-S.Lion	C MAR	3759.70	12300.58	2	13
235.0	4.3km W. Chimney Rock-S.Lion	C MAR	3759.70	12300.67	2	17
235.1	4.4km W. Chimney Rock-S.Lion	C MAR	3759.	12300.	3	2
236.0	1.4km S. Elephant Rock	MAR	3810.23	12257.22	1	19
237.0	0.6km S. Elephant Rock	MAR	3810.69	12257.50	1	1
238.0	0.2km E. Elephant Rock	MAR	3810.80	12257.80	2	20
239.0	N. End Driftwood Beach	MAR	3812.36	12258.61	2	46
240.0	3.2km S. Bird Island	MAR	3813.30	12258.29	2	10
240.1	S. Bird Island	MAR	3813.	12258.	2	3
241.0	2.9km S. Bird Island	MAR	3812.50	12258.42	5	135

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
242.0	1.7km S. Bird Island	MAR	3813.05	12258.88	2	2
242.1	Bird Island	MAR	3813.	12258.	2	1
242.5	Near Bird Island	MAR	3813.	12258.	2	28
243.0	0.7km SE Bird Island	MAR	3713.43	12359.39	5	111
244.0	0.6km SE Bird Island	MAR	3813.67	12259.20	1	234
244.1	SE Bird Island	MAR	3813.	12259.	2	1
245.0	Bird Island	MAR	3813.77	12259.57	2	419
245.1	SW Tomales Bluff	MAR	3814.	12259.	3	1
246.0	0.6km S. Tomales Bluff	MAR	3814.15	12259.84	3	35
247.0	Tomales Bluff	MAR	3814.47	12259.61	2	5
247.1	E. Side Tomales Pt.	MAR	3813.40	12258.60	2	41
248.0	Mud N. Toms Pt., Tomales Bay	MAR	3813.00	12257.26	4	431
248.1	Tomales Bay	MAR	38	122	4	72
248.5	E. Lower Pierce Ranch	MAR	3813.21	12258.37	4	30
249.0	Hog Island (E. Spit)	MAR	3811.83	12256.38	4	236
249.1	S.E. Hog Island	MAR	3811.60	12256.20	2	173
249.5	N. Dillon Beach	MAR	3817.49	12259.20	2	22
250.0	Pinnacle Rock Area	MAR	3818.	12301.	2	3
251.0	Bodega Rock	SON	3817.75	12302.82	2	115
252.0	New Bodega Head	SON	3818.16	12303.16	1	12
253.0	Mussel Pt.	SON	3819.32	12304.63	1	12
254.0	Arched Rock S. Carmet	SON	3822.20	12304.40	1	9
255.0	.7km S Duncans Pt.-Pocked Rock	SON	3823.39	12305.35	2	45
255.1	Duncans Pt.	SON	3823.	12305.	2	16
256.0	0.3km E. Duncans Pt.(Cove)	SON	3823.56	12305.61	2	8
257.0	Wrights Beach	SON	3824.11	12306.16	2	60
257.8	Furlong Gulch	SON	3824.80	12306.20	2	3
258.0	Furlong Gulch Area	SON	3825.26	12206.87	2	2
259.0	0.9km N. Shell Beach	SON	3825.28	12306.84	2	1
259.1	N. of Shell Beach	SON	3825.	12306.	2	1
260.0	1.2km N. Shell Beach	SON	3825.39	12306.90	2	2
260.1	Near Gull Rock	SON	3825.	12306.	2	1
261.0	Penny Island Russian River	SON	3826.75	12306.83	6	3
261.1	Russian River	SON	3827.50	12306.	6	10
261.2	Russian River	SON	3826.30	12305.80	6	18
262.0	Russian River Spits	SON	3827.02	12307.64	4	318
263.0	1.3km N. Russian River	SON	3827.34	12308.51	2	31
263.1	N. Russian River	SON	3827.22	12208.37	2	21
263.2	N. Russian River	SON	3827.22	12308.37	2	15
264.0	1.6km N. Russian River	SON	3827.32	12208.88	2	26
264.1	1.6 km N Russian River	SON	3827.30	12308.50	2	26
265.0	2.0km N. Russian River	SON	3827.61	12308.90	2	19
265.1	N. Russian River	SON	3828.39	12310.	2	14

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
266.0	1.6km N. Russian Gulch	SON	3827.60	12310.18	2	8
267.0	1.7km N. Russian Gulch	SON	3828.59	12310.26	2	5
268.0	1.9km N. Russian Gulch	SON	3828.63	12310.32	1	37
268.1	N. Russian Gulch	SON	3828.	12310.	2	4
269.0	0.3km S. Meyer Gulch	SON	3828.96	12310.87	2	13
270.0	1.8km S. Fort Ross Reef	SON	3829.75	12312.46	2	9
270.1	S. Fort Ross Reef	SON	3829.	12312.	2	13
270.2	S. Fort Ross Reef	SON	3829.	12312.	2	1
271.0	0.3km S. Fort Ross Gulch	SON	3830.10	12313.59	2	28
272.0	Fort Ross Reef	SON	3830.06	12313.92	2	14
272.1	N. Fort Ross Reef	SON	3830.	12313.	2	1
272.2	N. Fort Ross Reef	SON	3830.	12313.	2	2
273.0	0.2km N. Fort Ross Reef	SON	3830.23	12313.85	2	70
273.1	N. of Fort Ross Reef	SON	3830.	12313.	2	1
274.0	Fort Ross Cove	SON	3830.68	12314.63	2	36
274.1	N. Side Fort Ross Cove	SON	3830.	12314.	2	17
275.0	Northwest Cape (0.1km S.)	SON	3830.70	12315.17	2	37
276.0	Northwest Cape	SON	3830.72	12315.27	2	39
276.1	Northwest Cape	SON	3830.70	12315.17	2	29
277.0	0.3km N. Northwest Cape	SON	3831.87	12315.22	3	51
277.1	N. Northwest Cape	SON	3831.	12315.	2	3
278.0	0.9km N. Northwest Cape	SON	3831.12	12315.54	1	6
279.0	0.2km S. Windermere Pt.	SON	3831.42	12316.01	1	1
280.0	1.0km N. Windermere Pt.	SON	3831.55	12316.09	2	9
281.0	0.5km N. Timber Cove Gr.	SON	3831.84	12316.5	2	57
282.0	0.9km N. Timber Cove Gr.	SON	3832.15	12316.91	3 2	50
282.1	South End Stillwater Cove	SON	3832.	12317.	2	11
283.0	Stillwater Cove (inside)	SON	3832.78	12317.96	2	10
283.1	N. Stillwater Cove	SON	3832.80	12317.90	2	5
283.15	N. Stillwater Cove	SON	3832.36	12316.81	2	4
283.2	Gerstle Cove	SON	3833.50	12319.00	2 3	26
284.0	Salt Pt.	SON	3833.90	12319.98	2	69
284.1	Salt Pt. Area	SON	3833.	12319.	2	5
284.2	Salt Pt. Area	SON	38	12	2	3
284.3	Salt Pt. Area	SON	38	12	2	1
285.0	0.3km N. Salt Pt.	SON	3834.	12320.	2	57
285.1	Salt Pt. Area	SON	3834.	12320.	2	16
285.2	Salt Pt. Area	SON	3834.	12320.	1	10
285.4	Salt Point Area	SON	3834.	12320.	2	4
286.0	0.8km N. Salt Pt.	SON	3834.23	12320.26	2	6
286.1	.62 mi N Salt Point	SON	3833.88	12318.88	2	9
286.5	N. of Salt Point	SON	3834.	12320.	3	16
287.0	0.3km S. Chinese Gulch	SON	3835.21	12320.54	2	67

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
287.1	S. Chinese Gulch	SON	3835.80	12321.30	3	3
287.2	S Fisk Mill Cove	SON	3834.	12320.	2	1
287.3	Fisk Mill Cove	SON	3835.76	12320.86	2	2
288.0	.7kmN. Cannon Gulch-Fisk Mill	SON	3835.82	12321.47	2	10
289.0	0.7km S. Horseshoe Pt.	SON	3836.14	12321.94	2	17
290.0	0.7km N. Horseshoe Pt.	SON	3836.76	12322.02	2	34
291.0	0.7km N. Horseshoe Cove	SON	3836.95	12322.42	1	20
291.1	Horseshoe Cove Area	SON	3836.85	12322.42	2	1
292.0	0.5km S. Rocky Pt.	SON	3837.62	12323.15	3	1
292.1	Sandy Point	SON	3838.	12323.	1	15
293.0	Sandy Pt.	SON	3838.65	12323.98	3	30
293.5	Sandy Point	SON	3838.60	12323.80	2 1	43
294.0	0.7km S. Stewarts Pt.	SON	3838.98	12324.15	2	30
294.1	Stewarts Pt. Area	SON	3838.	12424.	2	5
295.0	0.2km S. Stewarts Pt.	SON	3839.19	12324.39	3	40
296.0	Stewarts Pt. Island	SON	3839.28	12324.50	3	115
296.1	Stewarts Point Island	SON	3839.	12324.	2	2
297.0	0.6km N. Stewarts Pt.	SON	3839.58	12324.54	2	9
297.1	Stewart's Pt. Area	SON	3839.	12324.	1	35
298.0	1.0km S. Black Pt.	SON	3840.34	12325.07	2	26
298.1	Black Pt. Area	SON	3840.56	12325.60	3	48
298.2	S.E. Black Pt.	SON	3840.	12325.	1	4
299.0	0.4km N. Black Pt.	SON	3840.87	12326.05	2	36
299.1	Black Pt. Area	SON	3841.60	12326.40	2	29
300.0	2.8km N. Black Pt.	SON	3842.06	12327.08	2	18
300.1	N of Black Point	SON	3842.	12327.	2	1
301.0	3.8km N. Black Pt.	SON	3842.48	12327.16	2	15
301.1	Diamond Rock	SON	3842.	12327.	2	23
302.0	5.2km N. Black Pt.	SON	3842.92	12327.63	2	125
303.0	6.0km N. Black Pt.	SON	3843.27	12328.21	2	20
304.0	6.2km N. Black Pt.	SON	3843.30	12328.27	2	47
305.0	6.7km N. Black Pt.	SON	3843.46	12328.64	2	53
306.0	7.1km N. Black Pt.	SON	3843.58	12328.92	2	1
307.0	7.3km N. Black Pt.	SON	3843.46	12329.22	2	164
308.0	7.4km N. Black Pt.	SON	3843.71	12329.02	2	74
309.0	7.7km N. Black Pt.	SON	3843.74	12329.09	1	45
310.0	1.3km S. Del Mar Pt.	SON	3844.25	12329.90	2	3
310.1	S. Del Mar Landing	SON	3844.	12330.	3	1
311.0	Del Mar Pt.	SON	3844.39	12330.93	1	20
312.0	1.3km N. Del Mar Pt.	SON	3844.39	12330.93	1	21
312.1	Del Mar Pt. Area	SON	38	12	1	27
313.0	Gualala Pt.	SON	3845.12	12331.60	1	79
313.1	N of Gualala Point	SON	3845.	12331.	2	9

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
314.0	Robinson Reef	MEN	3846.04	12332.74	2	4
315.0	Bourns Rock	MEN	3846.63	12333.49	2	75
315.1	N. Bourns Rk.	MEN	3836.	12333.	1	4
315.2	Bourns Landing	MEN	3846.74	12333.21	2	9
315.6	Collins Landing	MEN	3833.76	12346.92	2	21
316.0	Fish Rocks	MEN	3847.86	12335.44	5	35
316.1	Onshore Near Fish Rocks	MEN	3848.34	12336.36	2	3
317.0	Havens Neck-.3km N. Inside Cove	MEN	3848.62	12335.87	2	13
317.1	Vicinity Havens Neck	MEN	3849.	12336.	2	3
318.0	1.2km N. Havens Neck	MEN	3849.08	12336.43	2	47
318.1	Scholl Rock	MEN	3849.	12336.	2	25
319.0	0.6km S. Steen's Landing	MEN	3849.43	12336.74	2	7
319.1	N. Steens Landing	MEN	3849.	12336.	3	4
320.0	Morrison Gulch	MEN	3850.38	12337.99	3	69
321.0	Iverson's Landing (S. side)	MEN	3850.60	12338.51	2	32
322.0	Iverson's Landing (N. side)	MEN	3850.72	12338.66	2	25
323.0	Saunders Reef Area (inside)	MEN	3852.30	12339.80	2 1	28
324.0	0.8km N. Galloway Creek	MEN	3853.18	12341.14	1 1	53
324.1	1.2 Km S. Arena Cove	MEN	3854.	12342.	2 2	2
324.5	S. Arena Cove	MEN	3853.20	12340.90	1	29
324.9	S. Arena Cove/High Bluff	MEN	3853.	12340.	1	1
325.0	0.8km S. Arena Cove	MEN	3854.24	12342.40	1	34
325.1	S. Pt. Arena	MEN	3854.24	12342.40	1	74
325.2	Sea Lion Rocks	MEN	3856.61	12344.09	1	15
325.7	0.25 S Point Arena	MEN	3857.09	12344.65	1	19
326.0	Pt. Arena	MEN	3857.36	12343.73	2	145
327.0	0.4km N. Mallo Pass Cr.	MEN	3901.98	12341.41	1	48
327.1	N. Mallo Pass Cr.	MEN	3901.98	12341.77	2	57
328.0	0.9km N. Mallo Pass Cr.	MEN	3902.32	12341.97	2	49
329.0	1.0km N. Mallo Pass Cr.	MEN	3902.91	12342.60	5	84
329.1	Bridgeport Landing	MEN	3902.93	12341.75	2	2
329.5	N. Bridgeport Landing	MEN	3904.10	12342.20	2	1
330.0	0.6km S. S. Elk Cr.	MEN	3905.75	12342.84	2	42
331.0	Elk Creek	MEN	3906.	12342.	2	1
331.1	Big Rock	MEN	3906.42	12342.99	2	11
332.0	Cuffey's Pt.	MEN	3908.44	12344.49	2	176
332.1	N. Cuffey's Pt.	MEN	3909.58	12344.43	3	14
332.5	Taylor Rock	MEN	3909.60	12344.35	2	17
333.0	Devil's Basin	MEN	3910.09	12344.87	2	65
334.0	0.3km S. Saddle Pt.	MEN	3910.39	12345.17	2	73
335.0	0.2km S. Saddle Pt.	MEN	3910.53	12345.06	2	36
335.4	Vic. Arch of the Navarro	MEN	3911.	12346.	2	5
335.2	N of Saddle Point	MEN	3910.84	12345.36	3	1

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
335.8	0.5 Mi N. Navarro Point	MEN	4110.09	12311.45	2	25
336.0	0.4km S. Salmon Pt.	MEN	3911.64	12346.23	2	23
336.05	Albion Head	MEN	3914.	12346.	2	11
336.1	Albion Head	MEN	3914.	12346.	2	10
336.2	3km N. Whitesboro Cove	MEN	3914.	12346.	3	1
337.0	1.8km N. Albion Head	MEN	3914.65	12347.02	2	37
337.1	N. Albion Head	MEN	3914.	12347.	2	20
338.0	0.2km N. Stillwell Pt.	MEN	3915.12	12347.22	2	74
338.1	Buckhorn Cove	MEN	3915.	12347.	2	1
338.2	Van Damme Beach	MEN	3915.80	12347.80	2	14
339.0	Van Damme S. B.	MEN	3916.18	12347.66	2	38
339.1	Van Damme S.B.	MEN	3916.	12347.	2	17
340.0	0.7km N. Van Damme S.B.	MEN	3916.28	12348.01	3	28
340.05	N. Van Damme Beach	MEN	3916.	12348.	2	15
340.1	N of Van Damme Beach	MEN	3916.	12348.	2	23
341.0	1.5km N. Van Damme S.B.	MEN	3917.27	12348.16	2	98
342.0	Near Goat Isl. Mendocino City	MEN	3918.34	12348.70	2	32
342.1	Goat Island Area	MEN	3918.40	12348.90	3 2	31
343.0	0.6km N. Goat Island	MEN	3918.67	12348.59	2	34
343.1	N. Goat IS.	MEN	3918.	12348.	2	20
344.0	1.2km N. Russian Gulch	MEN	3918.90	12349.12	2	22
344.1	Pt. Cabrillo Light Station	MEN	3920.20	12349.	2	15
345.0	Point Cabrillo	MEN	3921.02	12349.69	2	31
345.05	1.2Km N. Russian Gulch	MEN	3921.65	12349.70	2	13
345.1	Casper Anchorage	MEN	3921.55	12349.76	2	24
345.2	Caspar Anchorage	MEN	3921.70	12349.80	3 2	25
345.3	Casper Point	MEN	3921.	12349	3	21
346.0	Casper Anchorage Area	MEN	3921.	12349.	2	41
347.0	S. Mitchell Cr.	MEN	3923.00	12349.40	2	21
348.0	Soldier Pt. Area	MEN	3926.	12349.	2	53
349.0	.7kmN.Soldier Pt.Ft.Bragg Area	MEN	3926.73	12349.42	2	51
349.1	N. Pudding Cr.	MEN	3927.16	12348.64	1	16
350.0	1.8km N. Pudding Cr.	MEN	3927.61	12348.56	2	27
351.0	0.8km S. Laguna Pt.	MEN	3928.30	12348.60	2	18
352.0	Laguna Pt.	MEN	3929.28	12348.55	1	183
352.1	N Laguna Point	MEN	3929.83	12347.94	2	39
352.2	N. Ten Mile River Bluff	MEN	3933.87	12346.35	2	26
353.0	0.3km N. Kibesillah Rock	MEN	3934.71	12346.93	2	55
354.0	Bruhel Pt.	MEN	3936.27	12347.36	5 2	68
355.0	Bell Pt.	MEN	3937.67	12347.25	2	20
355.1	?km N. Bell Pt.	MEN	3937.	12347.	2	4
355.5	3.2 km N. Abalone Point	MEN	3941.21	12347.89	2	32
356.0	Cape Vizcaino	MEN	3943.66	12349.81	2	67

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
356.1	Cape Vizcaino Area	MEN	3943.50	12349.95	5	100
357.0	0.4km N. Cottoneva Cr.	MEN	3944.06	12350.11	2	14
358.0	Williams Pt.	MEN	3945.	12350.	1	25
359.0	0.3km N. Soldier Frank Pt.	MEN	3945.55	12350.54	2	14
359.1	N. Sea Lion Rk.	MEN	3945.	12350.	2	1
360.0	0.5km S. Anderson Gulch	MEN	3950.91	12353.45	5	58
361.0	0.3km S. Anderson Gulch	MEN	3951.01	12353.21	5	186
362.0	0.3km N. Anderson Gulch	MEN	3951.16	12353.44	5	239
363.0	Northpoint Cove	MEN	3951.18	12353.79	5	839
364.0	0.6km N. Mistake Pt.	MEN	3951.85	12354.41	5	13
365.0	Jackass Creek Area	MEN	3953.92	12355.74	5	154
366.0	Seal Rock 1.5km S. Bear Harbor	MEN	3953.97	12355.96	2	240
366.1	Seal Rock Area	MEN	39	123	5	142
367.0	Pt. No Pass	MEN	3958.	12359.	2	10
367.1	Point Delgada	MEN	4000.98	12404.52	2	26
367.2	Point Delgada	H	4001.13	12404.54	2	23
368.0	1.4km N. Pt. Delgada	H	4001.50	12404.45	2	43
368.1	S.E. Miller Flat	H	4006.50	12402.45	2	33
369.0	5.0km N. Big Flat Creek	H	4009.27	12413.41	2	13
369.1	Reynolds Rk.	H	40	124	2	1
370.0	Sea Lion Gulch	H	4014.11	12420.46	2	3
371.0	1.7km S. Punta Gorda	H	4014.20	12420.60	2	25
372.0	1.3km S. Punta Gorda	H	4014.	12421.	2	3
372.1	Mattole Beach	H	4016.16	12422.44	1	16
373.0	Hair Seal Rock	H	4019.47	12421.32	2	206
373.1	N. Hair Seal Rock	H	4020.00	12421.40	2	34
374.0	1.6km N. Hair Seal Rock	H	4019.89	12421.39	2	43
375.0	2.2km N. Hair Seal Rock	H	4020.18	12421.74	1	10
376.0	2.7km N. Hair Seal Rock	H	4020.	12421.74	1	4
377.0	1.7km S. Sugarloaf Rock	H	4025.	12424.	2	4
378.0	0.4km S. Sugarloaf Rock	H	4026.12	12424.56	2	5
378.1	S. Sugarloaf Rock	H	4026.	12424.	1	2
379.0	0.2km S. Sugarloaf Rock	H	4026.24	12424.66	2	4
380.0	0.3km S. Sugarloaf Rock	H	4026.48	12424.69	2	15
380.1	Vicinity Cape Mendocino	H	4026.	12424.	2	4
380.2	N Cape Mendocino	H	4026.82	12424.98	2	2
381.0	False Cape	H	4030.12	12423.59	2	73
381.1	Cockrobin Island	H	4030.	12418.	5	441
381.2	S. Cockrobin Island	H	40	124	5	81
381.3	N. False Cape	H	4030.	12423.	2	15
382.0	Eel River Spit	H	4038.14	12418.99	4	1060
383.0	S. Humboldt Bay	H	40	124	4	830
384.0	Daby Island	H	4048.68	12408.97	4	518

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
384.1	Samoa Ruins/pilling	H	4048.	12408.	4	66
385.0	N. Humboldt Bay	H	4050.30	12406.50	4	170
386.0	Luffenholtz Cove	H	4102.44	12407.20	2	11
386.1	Vicinity Tepona Pt.	H	4102.	12407.	2	1
387.0	Cap Rock	H	4102.65	12407.51	2	25
388.0	Tower Rock	H	4103.10	12407.80	1	39
389.0	Seal Rock Shoals	H	4103.04	12407.96	2	31
390.0	Jamieson Shoal	H	4103.25	12408.14	2	79
390.1	Vicinity Trinidad Head	H	4103.	12408.	2	14
391.0	Dome Rock	H	4103.39	12408.43	2	43
392.0	Lighthouse Shoals	H	4103.40	12408.63	2	19
393.0	Marine Lab Shoals	H	4103.52	12409.45	2	93
394.0	Flatiron Shoals	H	4103.60	12409.61	2	29
395.0	Myer's Cove	H	4104.29	12409.46	2	42
395.1	N. Meyer's Cove	H	410	124	2	1
396.0	Bench Cove	H	4105.36	12409.32	1	23
396.1	Vicinity Bench Cove	H	4105.	12409.	1	16
397.0	Seal Rock	H	4105.90	12409.56	2	12
398.0	Seagull Rock	H	4107.45	12409.72	2	43
398.1	Vicinity Seagull Rock	H	4107.	12409.	2	6
399.0	Midway Rock	H	4107.48	12409.72	2	69
399.1	Midway Rock at Patrick's Pt.	H	4107.61	12310.20	2	25
400.0	Close Rock	H	4107.51	12409.56	1	67
401.0	Flat Top Rock	H	4107.52	12409.84	2	24
402.0	Little Gibraltar	H	4107.58	12409.72	2	15
403.0	Spearhead	H	4107.63	12409.88	1	27
404.0	Palmers Pt.	H	4107.75	12409.84	1	31
405.0	Cannonball Beach	H	4107.88	12409.80	1	30
405.05	Abalone Point	H	4107.50	12410.30	2	3
405.1	Patrick's Point Vic.	H	410	124	2	1
406.0	Sharp Pt.	H	4114.18	12406.48	3	55
407.0	Redwood Creek Spits	H	4117.55	12405.34	4	9
407.1	Mussel Point	H	4118.78	12405.85	2	13
408.0	Major Creek	H	4119.74	12405.01	2	10
409.0	Klamath R. Spits	DN	4132.71	12404.75	4	341
410.0	N. Klamath Rock	DN	4133.16	12405.41	2	48
411.0	Saddle Rocks	DN	4133.68	12405.76	2	20
412.0	Klamath Cove	DN	4133.98	12405.86	2	56
413.0	Two Rocks	DN	4134.35	12406.09	2	96
413.1	Midway Point	DN	4140.	1240	2	1
414.0	Scat Beach	DN	4140.23	12408.22	5	516
415.0	Millers Point	DN	4140.35	12408.45	1	100
416.0	Mates Point	DN	4140.97	12408.41	3	61

SITE	LOCATION	COU NTY	LAT	LONG	S U B S T	MAX
417.0	Battery Point	DN	4144.81	12412.34	1	3
418.0	Castle Rock	DN	4145.68	12414.55	2	542
419.0	Pt. St. George	DN	4146.00	12415.53	2	3
420.0	Mouth of Smith River	DN	4156.37	12411.82	4	37
421.0	NW Seal Rock	DN	41 .	124 .	2	9
422.0	Farallon Islands	FIs	3742.	123 .	2	84

